2008 IEEE International Symposium on Biomedical Imaging: From Nano to Macro

May 14-17, 2008

Paris Marriott Rive Gauche
Hotel & Conference Center

Paris
France

Program Guide

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CONFERENCE AT A GLANCE

Wednesday, May 14, 2008

13:00 –18:30	Registration Open
13:30 –18:00	Tutorials
19:00 –21:00	Welcome Party with Wine and Cheese

Thursday, May 15, 2008

07:30 –18:30	Registration Open
08:30 –09:00	Welcome Address
09:00 –10:00	Plenary: Gaudenz Danuser—Computer Vision of Cellular Life
10:00 –11:15	Technical Sessions (Poster)
11:15 –12:35	Technical Sessions (Oral)
12:35 –14:00	Lunch Break
14:00 –16:00	Technical Sessions (Oral)
16:00 –17:00	Technical Sessions (Poster)
17:00 –18:20	Technical Sessions (Oral)

Friday, May 16, 2008

07:30 –18:30	Registration Open
08:30 –09:30	Plenary: Matthias Fink—Supersonic Shear Imaging: A Multi-Wave Imaging Example
09:30 –10:45	Technical Sessions (Poster)
10:45 –12:45	Technical Sessions (Oral)
12:45 –14:00	Lunch Break
14:00 –16:00	Technical Sessions (Oral)
16:00 –17:00	Technical Sessions (Poster)
17:00 –18:20	Technical Sessions (Oral)
19:30 –23:30	Banquet, Musée Carnavalet

Saturday, May 17, 2008

07:30 –18:30	Registration Open
08:30 –09:30	Plenary: Denis Le Bihan—Membranes, Water and Diffusion: Potential for Brain Imaging
09:30 –10:45	Technical Sessions (Poster)
10:45 –12:45	Technical Sessions (Oral)
12:45 –14:00	Lunch Break
14:00 –16:00	Technical Sessions (Oral)
16:00 –17:00	Technical Sessions (Poster)
17:00 –18:20	Technical Sessions (Oral)

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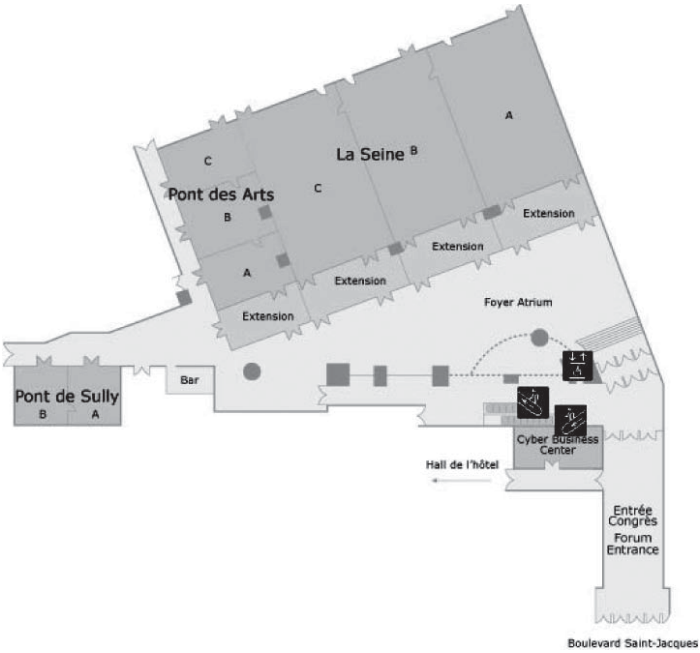
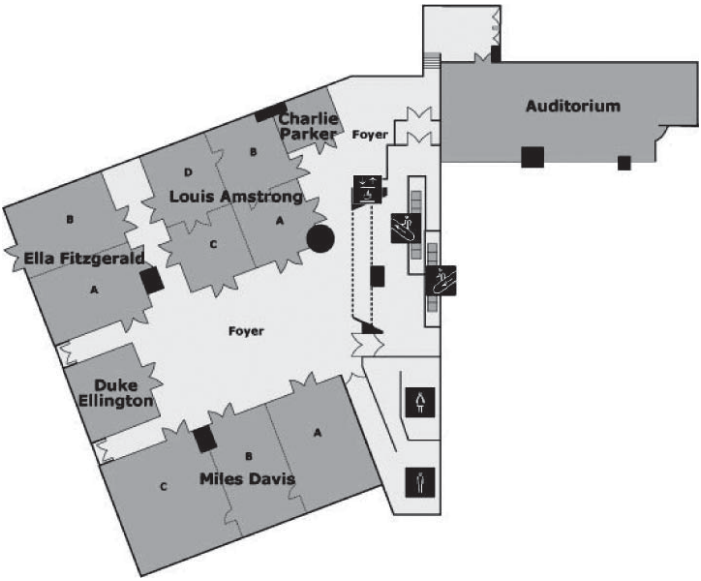
MEETING ROOM MAP

Paris Marriott Rive Gauche Hotel: Level 0



Paris Marriott Rive Gauche Hotel: Level –1



WELCOME

Bienvenue à ISBI'08. Welcome to ISBI'08. On behalf of the Organizing Committee we are pleased to welcome you to the fifth edition of the IEEE International Symposium on Biomedical Imaging: From Nano to Macro. This is ISBI's first occurrence outside the USA and its first European hosting. It is a great pleasure for all of us that the first move is in Paris and hope you will return home with a handful of Parisian delights. Since its inception in 2002, the meeting has become the premier platform fostering interaction between researchers in the multidisciplinary fields of medical and biological imaging. ISBI'08 begins on the afternoon of Wednesday May 14, with tutorials by leading experts on key topics in biomedical imaging. The meeting formally opens on the morning of Thursday May 15 and consists of three days of plenary talks, invited special sessions, and contributed oral and poster sessions. We are especially delighted that Prs. Gaudenz Danuser, Matthias Fink and Denis LeBihan, three world-leaders in their areas will be giving plenary talks on very exciting topics at the frontier of biomedical imaging. Each day thereafter includes a series of three oral sessions interleaved by two poster sessions that take place in the large atrium of the conference centre. The diverse nature of research in biomedical imaging is clearly reflected in the program, including presentations on the physical, mathematical, and computational aspects of image formation, image processing, analysis, and visualization, in a great variety of molecular, cellular, anatomical and functional imaging applications. The social events of the meeting include a welcome reception on Wednesday evening at the Marriott Hotel and a gala reception on Friday evening at the Carnavalet Museum.

We would like to take this opportunity to thank all those involved in the planning and organization of the meeting. Elsa Angelini was outstanding at managing the intricate and demanding financial aspects of the meeting. Josiane Zerubia and Wiro Niessen organized an excellent set of invited special sessions and Christian Roux the plenaries. Michael Unser arranged the exciting tutorials that open the meeting. Vannary Meas-Yedid and Séverine Dubuisson did a fantastic job at finding the exquisite place where the gala banquet takes place and arranging local aspects. Jeff Fessler was instrumental in getting support from the NIH. Spencer Shorte and Nicholas Ayache were as efficient as ever to put up what is the great novelty of this year's edition of ISBI, the industrial exhibit that you will be able to visit in the atrium. We gratefully acknowledge the time and effort donated by the reviewers in insuring a high level of quality in selecting

papers for inclusion in the program. Many thanks also to the staff of Conference Management Services, Inc. (CMS), in particular Lance Cotton, for his hands-on assistance in countless logistic matters, including online paper submission and reviewing, and preparation of the proceedings. We are thankful as well to the staff of Carte Blanche, in particular Frank Thabaud and Florence Panis, for their expert managing of registration and on-site matters. We thank all the student helpers you will see assisting you throughout the meeting. We thank Mercy Kowalczyk, Executive Director of the IEEE Signal Processing Society (SPS), Laura Wolf, Executive Director of the IEEE Engineering in Medicine and Biology Society (EMBS), and Christine Nora, Treasurer of IEEE France Section, for their support, help and advice. Finally, we acknowledge the generous contributions of supporting agencies Conseil Régional d'Ile de France, Institut Télécom, Institut Carnot Pasteur MI, INRIA, CNRS and companies Carl Zeiss, Merck & Co, Leica Microsystems, Siemens Corporate Research, Andor Technology, Skyscan, FEI Company, Hamamatsu Photonics and Biophotonics. We also acknowledge the NIH and the Conseil Régional d'Ile de France who provided travel support grants for respectively US-based and France-based young research scientists, to attend and present their work.

This year, 732 contributed papers were submitted for review. Two reviewers rated each paper and provided comments to the authors for improvement. Of these submissions, 380 were accepted for presentation, or about 52%. There are 140 contributed papers for oral presentation and 240 for poster presentation. In addition to contributed papers, 36 invited papers will be presented in several special sessions. We thank all authors for choosing to submit their work to ISBI. All papers presented at the meeting are included in the CD-ROM proceedings and will be available online through the IEEE Xplore database.

Next year, the meeting will be back to its initial country but relocate to Boston to be chaired by W. Clem Karl, before retuning to Europe at Rotterdam in the Netherlands in 2010 under the lead of Wiro Niessen.

In the meanwhile, we wish you all an enjoyable ISBI in wonderful Paris in May.

Jean-Christophe Olivo-Marin
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Thursday, May 15, 09:00–10:00 **La Seine A/B**

Dr. Gaudenz Danuser

Computer Vision of Cellular Life

Biography

Gaudenz Danuser graduated in 1997 with a Ph.D. in Computer Vision from ETH Zurich, Switzerland. Between 1997 and 1999 he joined the Program for the Architectural Dynamics in Living Cells directed by Dr. Shinya Inoué at the Marine Biological Laboratory (MBL) in Woods Hole, MA. He then returned to ETH, first as a Senior Researcher and later as an Assistant Professor for Cell Biomechanics. In summer 2003 he moved back to the U.S.A. to set up the Laboratory for Computational Cell Biology (LCCB) in the Center of Integrated Molecular Biosciences at the Scripps Research Institute in La Jolla. His team works on computational and experimental methods for quantitative, high resolution live cell microscopy and on multi-scale models of complex, multifunctional molecular machines. Currently, LCCB research focuses on the regulation of morphogenic pathways that mediate cell migration, cell division and vesicle transport. His research has been acknowledged by multiple awards, most recently the MBL Nikon fellowship 2008. He serves on the editorial boards of Biophysical Journal and IEEE Trans. Image Processing, and he is a standing member of the NIH review panel for microscopic imaging.

Friday, May 16, 08:30–09:30 **La Seine A/B**

Prof. Mathias Fink

Supersonic Shear Imaging:
A Multi-Wave Imaging Example

Biography

Mathias Fink is a Professor of Physics at the Ecole Supérieure de Physique et de Chimie Industrielles de la Ville de Paris (ESPCI) and at Paris 7 University (Denis Diderot), France. In 1990 he founded the laboratory Ondes et Acoustique at ESPCI. He is a member of the French Academy of Science and of the French Academy of Engineering. His current research interests include medical ultrasonic imaging, ultrasonic therapy, non-destructive testing, underwater acoustics, active control of sound and vibration, analogies between Optics

and Acoustics, wave coherence in multiply scattering media and time-reversal in physics. He holds nearly 40 patents and he has published more than 300 articles. 4 start-up companies have been created from his research activities.

Saturday, May 17, 08:30–09:30 **La Seine A/B**

Prof. Denis Le Bihan

Membranes, Water and Diffusion: Potential for Brain Imaging

Biography

Denis Le Bihan has achieved international recognition for his outstanding contributions to the development of new imaging methods allowing, in particular to study human brain function. His work has combined extremely innovative methods, developed for Magnetic Resonance Imaging (MRI) with the application of these methods to questions of the utmost scientific and clinical importance. Dr. Le Bihan is especially credited with inventing, developing, refining, and introducing into research and clinical practice the concept of diffusion MRI (and related Diffusion Tensor Imaging or DTI), a new and powerful approach to study normal and diseased brain anatomy and function, as well as brain wiring, from the measurement of molecular motion, in particular water, in biological tissues. This method is today used worldwide both for basic research and clinical applications, especially in acute brain ischemia, white matter diseases and connectivity disorders. Dr. Le Bihan is a full member of the French Academy of Sciences and currently the Director of NeuroSpin, a new Institute aimed at developing and using ultra high field Magnetic Resonance to understand the brain, from mouse to man. Dr. Le Bihan has authored or co-authored over 250 articles, book chapters and review articles in the fields of MRI, imaging, neuroscience and radiology. For his contributions, Dr. Le Bihan was awarded in 2001 the Gold Medal of the International Society for Magnetic Resonance in Medicine. He is also the 2002 recipient of the Lounsbery Award from the National Academy of Sciences (USA) and French Academy of Sciences and a 2003 corecipient (with S. Dehaene) of the prestigious Louis D. Award of the Institut de France.

SOCIAL ACTIVITIES

Welcome Reception
Wednesday, May 14, 19:00–21:00
Salons Les Jardins Hotel Marriott Paris Rive Gauche

At the end of the tutorials, a Welcome Party with wine tasting (animated by a wine producer from a Chateau near Bordeaux) and cheese degustation will be organized at the Marriott Rive-Gauche hotel on May 14th. This welcome reception will enable people to register to the conference and meet with their colleagues before the conference officially starts, the next day.

Gala Reception
Friday, May 16, 19:30–23:30
Musée Carnavalet

The reception will be organized on Friday night, May 16th at the Musée Carnavalet. This museum, devoted to the history of Paris, is located in the heart of the fashionable right bank Marais district in Paris and occupies a superb palace from the year 1548. Attendees will enjoy drinks and delicious French buffet. Weather permitting, attendees will enjoy wandering in the Renaissance gardens of the palace. They will also be invited to explore the several reconstituted palace rooms and its collection of paintings on Paris.

Because of traffic congestion in the centre of Paris, transportation to the reception will be on an individual basis, best by metro (precise information will be provided). Bus transportation back to the Marriott will be provided and start at 22:00, with pickups every half-hour, until 23:30.

TUTORIALS

Tutorials will take place on Wednesday, May 14th, 13:30-18:00. Tutorials are not included in the standard registration fee, but may be purchased on-site at the registration area.

T-1: Modern MRI: beyond Fourier encoding
Speaker: Klaas Pruessmann, ETH-Zurich, Switzerland
Location: Ella Fitzgerald A

T-2: Segmentation of biomedical images
Speaker: Milan Sonka, Univ. of Iowa, USA
Location: Louis Armstrong A/B

T-3: Iterative methods for image reconstruction
Speaker: Jeff Fessler, Univ. of Michigan, USA
Location: Louis Armstrong C/D

T-4: Advanced optical microscopy: challenges and opportunities
Speaker: Rainer Heinzmann, King's College, London, UK
Location: Ella Fitzgerald B

ON-SITE REGISTRATION

The registration desks will be open the following hours for pick-up of registration packets:

Wednesday, May 14	13:00–18:30
Thursday, May 15	07:30–18:30
Friday, May 16	07:30–18:30
Saturday, May 17	07:30–13:30

ISBI 2008 Technical Program

TH-P1a **Segmentation** (Poster)
Time: Thursday, May 15, 10:00 - 11:15
Place: Atrium Poster Area

TH-P1a.1 **AUTOMATED MAP-MRF EM LABELLING FOR VOLUME DETERMINATION IN PET**
Hugh Gribben, Paul Miller, Hongbin Wang, Queen's University Belfast, United Kingdom; Kathryn Carson, Alan Hounsell, Ashraf Zatari, Medical Physics Agency, United Kingdom

TH-P1a.2 **VECTORIAL MULTI-PHASE MOUSE BRAIN TUMOR SEGMENTATION IN T1-T2 MRI**
Vincent Israel-Jost, ENST/GET, France; Elodie Breton, Hôpital de Hautepierre, France; Elsa Angelini, ENST/GET, France; Philippe Choquet, Hôpital de Hautepierre, France; Isabelle Bloch, ENST/GET, France; André Constantinesco, Hôpital de Hautepierre, France

TH-P1a.3 **AN A CONTRARIO APPROACH FOR OUTLIERS SEGMENTATION: APPLICATION TO MULTIPLE SCLEROSIS IN MRI**
Francois Rousseau, LSIIT / CNRS, France; Frederic Blanc, Jérôme de Sèze, Lucien Rumbach, Jean-Paul Armspach, LINC, France

TH-P1a.4 **LIVER SEGMENTATION FOR HEPATIC LESIONS DETECTION AND CHARACTERISATION**
Carlos Platero, José Manuel Poncela, Pedro M. González, María C. Tobar, Javier Sanguino, Gabriel Asensio, Universidad Politécnica de Madrid, Spain; Ernesto Santos, Hospital Clínico San Carlos, Spain

TH-P1a.5 **SEGMENTATION OF FETAL 3D ULTRASOUND BASED ON STATISTICAL PRIOR AND DEFORMABLE MODEL**
Jérémie Anquez, Elsa Angelini, Isabelle Bloch, GET - Telecom Paris (ENST) - CNRS UMR 5141 LTCI, France

TH-P1a.6 **DETECTION AND CHARACTERIZATION OF THE TUMOR CHANGE BETWEEN TWO FDG PET SCANS USING PARAMETRIC IMAGING**
Hatem Necib, U8165 CNRS - Paris 7 - Paris 11, France; Michelle Dusart, Bruno Vanderlinden, Institut Jules Bordet, Belgium; Irène Buvat, U8165 CNRS - Paris 7 - Paris 11, France

(Continued from previous page.)

TH-P1a.7 **IMAGE ANALYSIS FOR DETECTION OF CORONARY ARTERY SOFT PLAQUES IN MDCT IMAGES**
Félix Renard, LSIIT, France; Yongyi Yang, Illinois Institute of Technology, United States

TH-P1a.8 **AUTOMATED SEGMENTATION OF THORACIC AORTA IN NON-CONTRAST CT IMAGES**
Uday Kurkure, Olga C. Avila-Montes, Ioannis Kakadiaris, Computational Biomedicine Lab, United States

TH-P1a.9 **MULTI-RESOLUTION PARALLEL INTEGRAL PROJECTION FOR FAST LOCALIZATION OF A STRAIGHT ELECTRODE IN 3D ULTRASOUND IMAGES**
Marian Uhercik, Jan Kybic, CTU in Prague, Czech Republic; Herve Liebgott, Christian Cachard, CREATIS, France

TH-P1a.10 **SEGMENTATION OF 4D MR RENOGRAPHY IMAGES USING TEMPORAL DYNAMICS IN A LEVEL SET FRAMEWORK**
Ting Song, Columbia University, United States; Vivian Lee, Henry Rusinek, Qun Chen, Louisa Bokacheva, New York University School of Medicine, United States; Andrew F. Laine, Columbia University, United States

TH-P1a.11 **CONSTRAINED OPTIMIZATION OF NONPARAMETRIC ENTROPY-BASED SEGMENTATION OF BRAIN STRUCTURES**
Alireza Akhondi Asl, Hamid Soltanian-Zadeh, Tehran University, Iran

TH-P1a.12 **MULTI-ORGAN AUTOMATIC SEGMENTATION IN 4D CONTRAST-ENHANCED ABDOMINAL CT**
Marius G. Linguraru, National Institute of Health, United States; Ronald M. Summers, NIH, United States

TH-P1a.13 **ASSESSMENT OF VENTRICLE VOLUME FROM SERIAL MRI SCANS IN COMMUNICATING HYDROCEPHALUS**
John A. Butman, NIH, United States; Marius G. Linguraru, National Institute of Health, United States

(Continued from previous page.)

TH-P1a.14 **VASCULATURE SEGMENTATION OF CT LIVER IMAGES USING GRAPH CUTS AND GRAPH-BASED ANALYSIS**
Hanno Homann, Grace Vesom, Department of Engineering Science, University of Oxford, Germany; J. Alison Noble, University of Oxford, United Kingdom

TH-P1a.15 **AUTOMATIC EXTRACTION OF FEMUR CONTOURS FROM CALIBRATED X-RAY IMAGES: A BAYESIAN INFERENCE APPROACH**
Xiao Dong, Guoyan Zheng, University of Bern, Switzerland

TH-P1a.16 **A NOVEL LEARNING BASED SEGMENTATION METHOD FOR RODENT BRAIN STRUCTURES USING MRI**
Jinghao Zhou, Rutgers, The State University of New Jersey, United States; Sukmoon Chang, Penn State University, United States; Qingshan Liu, Rutgers, The State University of New Jersey, United States; George Pappas, Vasilios Boronikolas, Michael Michaelides, Nora Volkow, Panayotis Thanos, Brookhaven National Laboratory, United States; Dimitris Metaxas, Rutgers, The State University of New Jersey, United States

TH-P1a.17 **A NEW EVALUATION OF THE BRAIN PARENCHYMAL FRACTION: APPLICATION IN MULTIPLE SCLEROSIS LONGITUDINAL STUDIES**
Jean-Christophe Souplet, INRIA, France; Christine Lebrun, CHU Pasteur, France; Nicholas Ayache, Grégoire Malandain, INRIA, France

TH-P1a.18 **TOWARD AUTOMATIC ZONAL SEGMENTATION OF PROSTATE BY COMBINING A DEFORMABLE MODEL AND A PROBABILISTIC FRAMEWORK**
Nasr Makni, Inserm U703, CNRS UMR 8146, France; Philippe Puech, Inserm U703, Radiology Department, University Hospital, Lille, France; Renaud Lopes, Inserm U703, CNRS UMR 8146, France; Anne-Sophie Dewalle, Inserm U703, France; Olivier Colot, Nacim Betrouni, Inserm u703, France

TH-P1a.19 **NONPARAMETRIC MARKOV PRIORS FOR TISSUE SEGMENTATION**
Zhuang Song, Suyash Awate, James Gee, University of Pennsylvania, United States

TH-P1a.20 **AUTOMATIC AND ROBUST FOREARM SEGMENTATION USING GRAPH CUTS**
Philipp Fürnstahl, Thomas J. Fuchs, ETH Zurich, Switzerland; Andreas Schweizer, Ladislav Nagy, University Hospital Balgrist, Switzerland; Gábor Székely, Matthias Harders, ETH Zurich, Switzerland

(Continued from previous page.)

TH-P1a.21 **SEGMENTATION OF HEAD BONES IN 3-D CT IMAGES FROM AN EXAMPLE**
Sylvain Faisan, Nicolas Passat, Vincent Noblet, LSIIT, UMR ULP-CNRS 7005, France; Renée Chabrier, Jean-Paul Armspach, LINC, UMR ULP-CNRS 7191, France; Christophe Meyer, Hôpital universitaire de Besançon, France

TH-P1a.22 **AUTOMATIC CONTOUR RETRIEVAL IN ANNOTATED TRUS PROSTATE IMAGES**
Geoffroy Rivet-Sabourin, Universite Laval, Canada; Alexandra Branzan Albu, University of Victoria, Canada; Denis Laurendeau, Universite Laval, Canada; Luc Beaulieu, Hopital Hotel-Dieu, Canada

TH-P1a.23 **AUTOMATIC TUNING OF A GRAPH-BASED IMAGE SEGMENTATION METHOD FOR DIGITAL MAMMOGRAPHY APPLICATIONS**
Hirotaka Susukida, Fei Ma, Mariusz Bajger, Flinders University, Australia

TH-P1a.24 **LESIONS DETECTION ON 3D BRAIN MRI USING TRIMMED LIKELIHOOD ESTIMATOR AND PROBABILISTIC ATLAS**
Stephanie Bricq, Christophe Collet, LSIIT - UMR CNRS 7005, France; Jean-Paul Armspach, LINC - UMR CNRS 7191, France

TH-P1a.25 **FULLY AUTOMATIC HIPPOCAMPUS SEGMENTATION DISCRIMINATES BETWEEN EARLY ALZHEIMER'S DISEASE AND NORMAL AGING**
Marie Chupin, Cognitive Neuroscience and Brain Imaging, France; Gaël Chételat, INSERM EPHE U923, France; Louis Lemieux, DCEE IoN UCL, United Kingdom; Bruno Dubois, INSERM U610, France; Line Garnero, Cognitive Neuroscience and Brain Imaging, France; Habib Bénali, INSERM UMR_S 678, France; Francis Eustache, INSERM EPHE U923, France; Stéphane Lehéricy, INSERM U610, France; Béatrice Desgranges, INSERM EPHE U923, France; Olivier Colliot, Cognitive Neuroscience and Brain Imaging, France

TH-P1a.26 **LOCALLY ADAPTIVE FUZZY PULMONARY VESSEL SEGMENTATION IN CONTRAST ENHANCED CT DATA**
Jens N. Kaftan, RWTH Aachen University, Germany; Annemarie Bakai, Siemens Healthcare Sector, Germany; Marco Das, RWTH Aachen University Hospital, Germany; Til Aach, RWTH Aachen University, Germany

TH-P1a.27 **A MATHEMATICAL FRAMEWORK FOR INCORPORATING ANATOMICAL KNOWLEDGE IN DT-MRI ANALYSIS**
Mahnaz Maddah, CSAIL, Massachusetts Institute of Technology, United States; Lilla Zollei, Massachusetts General Hospital, United States; W. Eric L. Grimson, CSAIL, Massachusetts Institute of Technology, United States; Carl-Fredrik Westin, Brigham and Women's Hospital, United States; William M. Wells, CSAIL, Massachusetts Institute of Technology, United States

(Continued from previous page.)

TH-P1a.28 **IMAGE SEGMENTATION BASED ON THE MUMFORD-SHAH MODEL AND ITS VARIATIONS**
Xiaojun Du, Tien D. Bui, Department of Computer Science and Software Engineering, Concordia University, Canada

TH-P1a.29 **ATLAS BASED AUTOMATED SEGMENTATION OF THE QUADRATUS LUMBORUM MUSCLE USING NON-RIGID REGISTRATION ON MAGNETIC RESONANCE IMAGES OF THE THORACOLUMBAR REGION**
Valer Jurcak, The University of Queensland, Australia; Jurgen Fripp, The University of Queensland and eHealth Research Centre - CSIRO ICT Centre, Australia; Craig Engstrom, The University of Queensland, Australia; Duncan Walker, Southernex Imaging Group, Australia; Olivier Salvado, Sébastien Ourselin, eHealth Research Centre - CSIRO ICT Centre, Australia; Stuart Crozier, The University of Queensland, Australia

TH-P1a.30 **PROJECTION PLANE PROCESSING FOR SKETCH-BASED VOLUME SEGMENTATION**
Shigeru Owada, Frank Nielsen, Sony Computer Science Labs, Inc., Japan; Takeo Igarashi, The University of Tokyo / Sony Computer Science Labs, Inc., Japan; Ryo Haraguchi, Kazuo Nakazawa, National Cardiovascular Center, Japan

TH-P1a.31 **ASSIGNING STATISTICAL SIGNIFICANCE TO TUMOR CHANGES IN PATIENT MONITORING USING FDG PET**
Perrine Tylski, INSERM U678, France; Michelle Dusart, Bruno Vanderlinden, Institut Jules Bordet, Belgium; Irène Buvat, INSERM U678, France

TH-P1a.32 **A STATISTICAL LEARNING APPPROACH TO VERTEBRA DETECTION AND SEGMENTATION FROM SPINAL MRI**
Szu-Hao Huang, Shang-Hong Lai, National Tsing Hua University, Taiwan; Carol Novak, Siemens Corp. Research, United States

TH-P1a.33 **PROSTATE SEGMENTATION IN ECHOGRAPHIC IMAGES: A VARIATIONAL APPROACH USING DEFORMABLE SUPER-ELLIPSE AND RAYLEIGH DISTRIBUTION**
Laurent Saroul, Olivier Bernard, Didier Vray, Denis Friboulet, CREATIS-LRMN, France

TH-P1b **Biological imaging** (Poster)
Time: Thursday, May 15, 10:00 - 11:15
Place: Atrium Poster Area

TH-P1b.34 **BACKPROJECTION-BASED RECONSTRUCTION AND CORRECTION FOR DISTANCE-DEPENDENT DEFOCUS IN CRYOELECTRON MICROSCOPY**
Ivan Kazantsev, Technical University of Denmark, Denmark; Gabor Herman, City University of New York, United States; Laslo Cernetic, University of Szeged, Hungary

TH-P1b.35 **HIGH-RESOLUTION LOCAL IMAGING USING A MICRO-CT**
Soo Yeol Lee, Min Hyoung Cho, Jeong Min Choi, Kyung Hee University, Republic of Korea

TH-P1b.36 **SEM-HOSTED SOFT X-RAY MICROSCOPE FOR LIVE CELL IMAGING**
Alexander Sasov, SkyScan, Belgium

TH-P1b.37 **THREE-DIMENSIONAL IMAGE ACQUISITION SYSTEM FOR MULTI-SPERM TRACKING**
Gabriel Corkidi, Instituto de Biotecnología, UNAM, Mexico; Blanca Taboada, Centro de Ciencias Aplicadas y Desarrollo Tecnológico, UNAM, Mexico; Christopher Wood, Adán Guerrero, Alberto Darszon, Instituto de Biotecnología, UNAM, Mexico

TH-P1b.38 **MULTIFRAME SURE-LET DENOISING OF TIMELAPSE FLUORESCENCE MICROSCOPY IMAGES**
Saskia Delpretti, Florian Luisier, Sathish Ramani, EPFL, Switzerland; Thierry Blu, The Chinese University of Hong Kong, Hong Kong SAR of China; Michael Unser, EPFL, Switzerland

TH-P1b.39 **SYNTHETIC IMAGES OF BLOOD MICROCIRCULATION TO ASSESS PRECISION OF VELOCITY PROFILES BY A CROSS-CORRELATION METHOD**
Marianne Fenech, Boris Chayer, Guy Cloutier, Laboratory of Biorheology and Medical Ultrasonics, Canada

(Continued from previous page.)

TH-P1b.40 **AN ACCURATE PSF MODEL WITH FEW PARAMETERS FOR AXIALLY SHIFT-VARIANT DECONVOLUTION**
François Aguet, Dimitri Van De Ville, Michael Unser, Ecole Polytechnique Fédérale de Lausanne, Switzerland

TH-P1b.41 **BUILDING AN ATLAS OF HIPPOCAMPAL SUBFIELDS USING POSTMORTEM MRI**
Paul Yushkevich, Brian Avants, John Pluta, David Minkoff, Stephen Pickup, Weixia Liu, John Detre, Murray Grossman, James Gee, University of Pennsylvania, United States

TH-P1b.42 **AXONAL BOUTON MODELING, DETECTION AND DISTRIBUTION ANALYSIS FOR THE STUDY OF NEURAL CIRCUIT ORGANIZATION AND PLASTICITY**
Christina A. Hallock, Inci Ozgunes, Ramamurthy Bhagavatula, Gustavo K. Rohde, Justin C. Crowley, Christina E. Onorato, Abhay Mavalankar, Amina Chebira, Chuen Hwa Tan, Markus Pueschel, Jelena Kovacevic, Carnegie Mellon University, United States

TH-P1b.43 **MONTE CARLO SIMULATION TO DETERMINE CONDITIONS FOR OPTICAL MOLECULAR IMAGING OF VASCULAR DISEASE**
Mambidzeni Madzivire, Christopher Riederer, James Greenleaf, Mayo Clinic and Foundation, United States

TH-AM-O1 **Variational Methods in Microscopy** (Oral)
Time: Thursday, May 15, 11:15 - 12:35
Place: La Seine A
Chair: Gustavo Rohde

11:15 - 11:35
TH-AM-O1.1 **LEVEL SET SEGMENTATION OF DERMOSCOPY IMAGES**
Margarida Silveira, Jorge S. Marques, Instituto Superior Técnico, Portugal

11:35 - 11:55
TH-AM-O1.2 **VARIATIONAL B-SPLINE LEVEL-SET METHOD FOR FAST BIOMEDICAL IMAGE SEGMENTATION**
Olivier Bernard, Denis Friboulet, CREATIS-LRMN, France; Philippe Thevenaz, Michael Unser, Biomedical Imaging Group, EPFL, Switzerland

11:55 - 12:15
TH-AM-O1.3 **ADVANCED PHASE-BASED SEGMENTATION OF MULTIPLE CELLS FROM BRIGHTFIELD MICROSCOPY IMAGES**
Rehan Ali, Mark Gooding, Martin Christlieb, Michael Brady, University of Oxford, United Kingdom

12:15 - 12:35
TH-AM-O1.4 **ADVANCED LEVEL-SET BASED MULTIPLE-CELL SEGMENTATION AND TRACKING IN TIME-LAPSE FLUORESCENCE MICROSCOPY IMAGES**
Oleh Dzyubachyk, Wiro Niessen, Erik Meijering, Erasmus MC — University Medical Center Rotterdam, Netherlands

TH-AM-O2 **Interventional Imaging** (Oral)
Time: Thursday, May 15, 11:15 - 12:35
Place: La Seine D
Chair: Marius George Linguraru

11:15 - 11:35
TH-AM-O2.1 **LABELLED MICROSPHERES ASSESSMENT USING 1.5T SCANNER FOR EMBOLIZATION FOLLOW UP**
Hassan Jassar, François Langevin, Université de Technologie de Compiègne, France

11:35 - 11:55
TH-AM-O2.2 **WIRES SEGMENTATION IN FLUOROSCOPIC IMAGES DURING CEREBRAL ANEURYSM ENDOVASCULAR INTERVENTION**
Simon Lessard, Caroline Lau, Ecole de technologie superieure, Canada; Daniel Roy, Gilles Soulez, Centre de recherche CHUM - Notre Dame Hospital, Canada; Jacques A. de Guise, Ecole de technologie superieure, Canada

11:55 - 12:15
TH-AM-O2.3 **TEXTURE-DRIVEN CORONARY ARTERY PLAQUE CHARACTERIZATION USING WAVELET PACKET SIGNATURES**
Amin Katouzian, Columbia University, United States; Babak Baseri, University of Medicine and Dentistry of New Jersey, United States; Elisa Konofagou, Andrew F. Laine, Columbia University, United States

12:15 - 12:35
TH-AM-O2.4 **CO-REGISTRATION OF A NEEDLE-POSITIONING DEVICE WITH A VOLUMETRIC X-RAY MICRO-COMPUTED TOMOGRAPHY SCANNER FOR IMAGE-GUIDED PRECLINICAL INTERVENTIONS**
Adam Waspe, University of Western Ontario, Canada; David Holdsworth, Robarts Research Institute, Canada; James Lacefield, University of Western Ontario, Canada; Aaron Fenster, Robarts Research Institute, Canada

TH-AM-O3 **Segmentation in Brain Imaging** (Oral)
Time: Thursday, May 15, 11:15 - 12:35
Place: La Seine B
Chair: Sonia Goncalves-Verheij

11:15 - 11:35
TH-AM-O3.1 **IMPROVED CORTICAL THICKNESS MEASUREMENT FROM MR IMAGES USING PARTIAL VOLUME ESTIMATION**
Pierrick Bourgeat, Oscar Acosta, Maria Zuluaga, Jurgen Fripp, Olivier Salvado, CSIRO ICT Centre, Australia; Sébastien Ourselin, University College London, United Kingdom

11:35 - 11:55
TH-AM-O3.2 **CLOUDS: A MODEL FOR SYNERGISTIC IMAGE SEGMENTATION**
Paulo Miranda, Alexandre Falcão, State University of Campinas, Brazil; Jayaram Udupa, University of Pennsylvania, United States

11:55 - 12:15
TH-AM-O3.3 **MULTIVARIATE SEGMENTATION OF BRAIN TISSUES BY FUSION OF MRI AND DTI DATA**
Suyash Awate, Hui Zhang, University of Pennsylvania, United States; Tony Simon, University of California, Davis, United States; James Gee, University of Pennsylvania, United States

12:15 - 12:35
TH-AM-O3.4 **COUPLED NONPARAMETRIC SHAPE PRIORS FOR SEGMENTATION OF MULTIPLE BASAL GANGLIA STRUCTURES**
Gokhan Uzunbas, Mujdat Cetin, Gozde Unal, Aytul Ercil, Sabanci University, Turkey

TH-AM-O4 **Segmentation in Cardiac Imaging** (Oral)
Time: Thursday, May 15, 11:15 - 12:35
Place: La Seine C
Chair: Gareth Funka-Lea

11:15 - 11:35
TH-AM-O4.1 **A FAST AND ACCURATE TRACKING ALGORITHM OF THE LEFT VENTRICLE IN 3D ECHOCARDIOGRAPHY**
Lin Yang, Rutgers University, United States; Bogdan Georgescu, Yefeng Zheng, Siemens Corporate Research, United States; David J. Foran, Univ. of Medical and Dentistry of New Jersey, United States; Dorin Comaniciu, Siemens Corporate Research, United States

11:35 - 11:55
TH-AM-O4.2 **AUTOMATIC MYOCARDIUM SEGMENTATION IN LATE-ENHANCEMENT MRI**
Cybele Ciofolo, Maxim Fradkin, Benoit Mory, Medisys Research Lab, Philips Healthcare, France; Gilion Hautvast, Marcel Breeuwer, Philips Medical Systems Nederland B.V., Netherlands

11:55 - 12:15
TH-AM-O4.3 **SEGMENTATION OF THE EVOLVING LEFT VENTRICLE BY LEARNING THE DYNAMICS**
Walter Sun, Microsoft Corporation, United States; Mujdat Cetin, Sabanci University, Turkey; Ray Chan, Massachusetts General Hospital, United States; Alan S. Willsky, Massachusetts Institute of Technology, United States

12:15 - 12:35
TH-AM-O4.4 **REAL-TIME SEGMENTATION OF 4D ULTRASOUND BY ACTIVE GEOMETRIC FUNCTIONS**
Qi Duan, Columbia University, United States; Elsa Angelini, Institut Telecom, Telecom-ParisTech, France; Shunichi Homma, Andrew F. Laine, Columbia University, United States

TH-PM1-O1 **Storage and Retrieval** (Oral)
Time: Thursday, May 15, 14:00 - 16:00
Place: La Seine D
Chair: Alexandre Falcao

14:00 - 14:20
TH-PM1-O1.1 AN ADAPTIVE HYBRID IMAGE COMPRESSION METHOD AND ITS APPLICATION TO MEDICAL IMAGES
Ali Al-Fayadh, Abir Hussain, Paulo Lisboa, Dhiya Al-Jumeily, Liverpool John Moores University, United Kingdom; Mohammed Al-Jumaily, Walton Hospital, United Kingdom

14:20 - 14:40
TH-PM1-O1.2 INTENSITY VERSUS TEXTURE FOR MEDICAL IMAGE SEARCH AND RETRIVAL
Devrim Unay, Ahmet Ekin, Philips Research Europe, Netherlands

14:40 - 15:00
TH-PM1-O1.3 MULTIMODAL MEDICAL CASE RETRIEVAL USING BAYESIAN NETWORKS AND THE DEZERT-SMARANDACHE THEORY
Gwénolé Quellec, GET/ENST Bretagne, France; Mathieu Lamard, Univ Bretagne Occidentale, France; Lynda Bekri, Inserm, U650, France; Guy Cazuguel, Christian Roux, GET/ENST Bretagne, France; Béatrice Cochener, Univ Bretagne Occidentale, France

15:00 - 15:20
TH-PM1-O1.4 DISTRIBUTED ONLINE ANOMALY DETECTION IN HIGH-CONTENT SCREENING
Adam Goode, Carnegie Mellon University, United States; Rahul Sukthankar, Lily Mummert, Mei Chen, Intel Research Pittsburgh, United States; Jeffrey Saltzman, David Ross, Stacey Szymanski, Anil Tarachandani, Merck & Co., Inc., United States; Mahadev Satyanarayanan, Carnegie Mellon University, United States

15:20 - 15:40
TH-PM1-O1.5 PATIENT CLASSIFICATION USING ASSOCIATION MINING OF CLINICAL IMAGES
Sumeet Dua, Vineet Jain, Louisiana Tech University, United States; Hilary Thompson, Louisiana State University Health Sciences Center, United States

15:40 - 16:00
TH-PM1-O1.6 A WEB-ACCESSIBLE FRAMEWORK FOR THE AUTOMATED STORAGE AND TEXTURE ANALYSIS OF BIOMEDICAL IMAGES
Michael Barnathan, Jingjing Zhang, Vasileios Megalooikonomou, Temple University, United States

TH-PM1-O2 **Tracking** (Oral)
Time: Thursday, May 15, 14:00 - 16:00
Place: La Seine A
Chair: Séverine Dubuisson

14:00 - 14:20
TH-PM1-O2.1 **NONLINEAR FILTERING FOR EXTRACTING ORIENTATION AND TRACING TUBULAR STRUCTURES IN 2-D MEDICAL IMAGES**
Hasan Ertan Cetingul, Rene Vidal, Gernot Plank, Natalia Trayanova, Johns Hopkins University, United States

14:20 - 14:40
TH-PM1-O2.2 **A NEW DETECTION SCHEME FOR MULTIPLE OBJECT TRACKING IN FLUORESCENCE MICROSCOPY BY JOINT PROBABILISTIC DATA ASSOCIATION FILTERING**
Ihor Smal, Wiro Niessen, Erik Meijering, Erasmus MC - University Medical Center Rotterdam, Netherlands

14:40 - 15:00
TH-PM1-O2.3 **MEDIAL-BASED BAYESIAN TRACKING FOR VASCULAR SEGMENTATION: APPLICATION TO CORONARY ARTERIES IN 3D CT ANGIOGRAPHY**
David Lesage, Siemens Corporate Research, United States; Elsa Angelini, Isabelle Bloch, GET-Télécom Paris, CNRS UMR 5141, France; Gareth Funka-Lea, Siemens Corporate Research, United States

15:00 - 15:20
TH-PM1-O2.4 **PROBABILISTIC TRACKING OF VIRUS PARTICLES IN FLUORESCENCE MICROSCOPY IMAGES**
William J. Godinez, University of Heidelberg and DKFZ Heidelberg, Germany; Marko Lampe, University of Heidelberg, Germany; Stefan Woerz, University of Heidelberg and DKFZ Heidelberg, Germany; Barbara Mueller, University of Heidelberg, Germany; Roland Eils, Karl Rohr, University of Heidelberg and DKFZ Heidelberg, Germany

15:20 - 15:40
TH-PM1-O2.5 **MULTIFRAME ESTIMATION OF CONTOUR EVOLUTION IN MEDICAL IMAGES**
Angela Dias, Federal University of Para, Brazil; Sergio Furuie, Sao Paulo Heart Institute, Brazil

15:40 - 16:00
TH-PM1-O2.6 **3D CARDIAC MOTION TRACKING USING ROBUST POINT MATCHING AND MESHLESS DEFORMABLE MODELS**
Ting Chen, New York University, United States; Xiaoxu Wang, Dimitris Metaxas, Rutgers, the State university of new jersey, United States; Leon Axel, New York University, United States

TH-PM-SFS1 Computational HistoPathology: Advances and New Challenges (Special Session)
Time: Thursday, May 15, 14:00 - 16:00
Place: La Seine B
Organizers and Chairs: Nasir Rajpoot and Tim Nattkemper

14:00 - 14:20
TH-PM-SFS1.1 AUTOMATED GLAND AND NUCLEI SEGMENTATION FOR GRADING OF PROSTATE AND BREAST CANCER HISTOPATHOLOGY
Shivang Naik, Scott Doyle, Shannon Agner, Anant Madabhushi, Rutgers University, United States; Michael Feldman, John Tomaszewski, University of Pennsylvania, United States

14:20 - 14:40
TH-PM-SFS1.2 MULTI-MODAL IMAGING OF HISTOLOGICAL TISSUE SECTIONS
Ali Can, Musodiq Bello, Harvey Cline, Xiaodong Tao, Fiona Ginty, Michael Gerdes, Michael Montalto, General Electric, United States

14:40 - 15:00
TH-PM-SFS1.3 COLOR AND TEXTURE BASED SEGMENTATION OF MOLECULAR PATHOLOGY IMAGES USING HSOMS
Manasi Datar, GE Global Research, India; Dirk Padfield, GE Global Research, Rensselaer Polytechnic Institute, United States; Harvey Cline, GE Global Research, United States

15:00 - 15:20
TH-PM-SFS1.4 PATHOLOGICAL IMAGE SEGMENTATION FOR NEUROBLASTOMA USING THE GPU
Antonio Ruiz, University of Malaga, Spain; Jun Kong, Ohio State University, United States; Manuel Ujaldon, University of Malaga, Spain; Kim Boyer, Joel Saltz, Metin Gurcan, Ohio State University, Spain

15:20 - 15:40
TH-PM-SFS1.5 AUTOMATED LOCALIZATION AND QUANTIFICATION OF PROTEIN MULTIPLEXES VIA MULTISPECTRAL FLUORESCENCE IMAGING
Mikhail Teverovskiy, Yevgen Vengrenyuk, Ali Tabesh, Marina Sapir, Stephen Fogarasi, Ho-Yuen Pang, Faisal M. Khan, Stefan Hamann, Paola Capodieci, Mark Clayton, Robert Kim, Gerardo Fernandez, Ricardo Mesa-Tejada, Michael Donovan, Aureon Laboratories, United States

15:40 - 16:00
TH-PM-SFS1.6 AUTOMATED COMPARISON OF PROTEIN SUBCELLULAR LOCATION PATTERNS BETWEEN IMAGES OF NORMAL AND CANCEROUS TISSUES
Estelle Glory, Justin Newberg, Robert F. Murphy, Carnegie Mellon University, United States

TH-PM-SFS2 High Throughput Screening in Microscopy (Special Session)
Time: Thursday, May 15, 14:00 - 16:00
Place: La Seine C
Organizers and Chairs: Jeffrey Price and Zvi Kam

14:00 - 14:17
TH-PM-SFS2.1 AUTOMATED PROTEOME-WIDE DETERMINATION OF SUBCELLULAR LOCATION USING HIGH THROUGHPUT MICROSCOPY
Robert F. Murphy, Carnegie Mellon University, United States

14:17 - 14:34
TH-PM-SFS2.2 AUTOMATION OF THE DETECTION OF LUNG CANCER CELLS IN MINIMAL SAMPLES OF BRONCHIOALVEOLAR LAVAGE
Carlos Ortiz-de-Solorzano, Thomas Pengo, Miguel Galarraga, Arrate Munoz-Barrutia, CIMA-Universidad de Navarra, Spain

14:34 - 14:51
TH-PM-SFS2.3 AUTOMATED CALCIUM MEASUREMENTS IN LIVE CARDIOMYOCYTES
David Charlot, Victor Campa, Burnahm Institute for Medical Research, United States; Behrad Azimi, Burnham Institute for Medical Research, United States; Mark Mercola, Burnahm Institute for Medical Research, United States; Randall Ingermanson, Patrick McDonough, Vala Sciences Inc., United States; Jeffrey Price, Burnahm Institute for Medical Research, United States

14:51 - 15:08
TH-PM-SFS2.4 HIGH THROUGHPUT MULTIPLEX IMAGE ANALYSES FOR ANDROGEN RECEPTOR FUNCTION
Adam T. Szafran, Marco Marcelli, Michael A. Mancini, Baylor College of Medicine, United States

15:08 - 15:25
TH-PM-SFS2.5 TOWARDS DIGITAL REPRESENTATION OF DROSOPHILA EMBRYOGENESIS
Stephan Preibisch, Radoslaw Ejsmont, MPI-CBG, Germany; Torsten Rohlfing, SRI International, United States; Pavel Tomancak, MPI-CBG, Germany

15:25 - 15:42
TH-PM-SFS2.6 A GENOME WIDE RNAI SCREEN BY TIME LAPSE MICROSCOPY IN ORDER TO IDENTIFY MITOTIC GENES - COMPUTATIONAL ASPECTS AND CHALLENGES
Thomas Walter, EMBL, Germany; Michael Held, ETH Zürich, Switzerland; Beate Neumann, EMBL, Germany; Jean-Karim Hériché, Wellcome Trust Sanger Institute, United Kingdom; Christian Conrad, Rainer Pepperkok, Jan Ellenberg, EMBL, Germany

(Continued from previous page.)

15:42 - 15:59

TH-PM-SFS2.7 IMAGE ACQUISITION AND UNDERSTANDING IN HIGH-THROUGHPUT HIGH-RESOLUTION CELL-BASED SCREENING APPLICATIONS

Yuvalal Liron, Yael Paran, Irina Lavelin, Suha Naffar-Abu-Amara, Sabina Winograd-Katz, Benjamin Geiger, Zvi Kam, Weizmann Institute of Science, Israel

TH-P2a **High-Throughput Imaging and Screening** (Poster)
Time: Thursday, May 15, 16:00 - 17:00
Place: Atrium Poster Area

TH-P2a.1 **MAPPING HIPPOCAMPAL DEGENERATION IN 400 SUBJECTS WITH A NOVEL AUTOMATED SEGMENTATION APPROACH**
Jonathan Morra, Zhuowen Tu, Liana Apostolova, Amity Green, Christina Avedissian, Sarah K. Madsen, Neelroop Parikshak, Xue Hua, Arthur W. Toga, University of California, Los Angeles, United States; Clifford Jack, Mayo Clinic College of Medicine, United States; Norbert Schuff, Michael Weiner, University of California, San Francisco, United States; Paul M. Thompson, University of California, Los Angeles, United States

TH-P2a.2 **SPATIOTEMPORAL BAYESIAN CELL POPULATION TRACKING AND ANALYSIS WITH LINEAGE CONSTRUCTION**
Luke Beaumont, James Wakefield, Oxford University, United Kingdom; J. Alison Noble, University of Oxford, United Kingdom

TH-P2a.3 **SCORING HISTOLOGICAL SECTIONS THROUGH IMMUNOHISTOCHEMISTRY**
Hang Chang, Lawrence Berkeley National Laboratory, United States; Rosa Anna DeFilippis, Thea Tlsty, University of California, San Francisco, United States; Bahram Parvin, Lawrence Berkeley National Laboratory, United States

TH-P2a.4 **ACTIVE MASK SEGMENTATION FOR THE CELL-VOLUME COMPUTATION AND GOLGI-BODY SEGMENTATION OF HELA CELL IMAGES**
Gowri Srinivasa, Carnegie Mellon University, United States; Matthew Fickus, Air Force Inst. of Tech., United States; Manuel N. Gonzalez-Rivero, Sarah Hsieh, Yusong Guo, Adam Linstedt, Jelena Kovacevic, Carnegie Mellon University, United States

TH-P2a.5 **FAST REGISTRATION-BASED AUTOMATIC SEGMENTATION OF SERIAL SECTION IMAGES FOR HIGH-RESOLUTION 3D PLANT SEED MODELING**
Felix Bollenbeck, Udo Seiffert, Leibniz Institute of Plant Genetics and Crop Plant Research, Germany

TH-P2a.6 **TOWARDS HIGH-THROUGHPUT FLIM FOR PROTEIN-PROTEIN INTERACTION SCREENING OF LIVE CELLS AND TISSUE MICROARRAYS**
Paul Barber, Glenn Pierce, University of Oxford Gray Cancer Institute, United Kingdom; Simon Ameer-Beg, Dan Matthews, Leo Carlin, Melanie Keppler, Muireann Kelleher, Frederick Festy, King's College London, United Kingdom; Cheryll Gillett, Robert Springall, Guy's Hospital, United Kingdom; Tony Ng, King's College London, United Kingdom; Borivoj Vojnovic, University of Oxford Gray Cancer Institute, United Kingdom

(Continued from previous page.)

TH-P2a.7 **MORPHOLOGICAL-BASED ADAPTIVE SEGMENTATION AND QUANTIFICATION OF CELL ASSAYS IN HIGH CONTENT SCREENING**
Jesus Angulo, Ecole des Mines de Paris, France; Béatrice Schaack, CEA Grenoble, France

TH-P2a.8 **MONTE CARLO ASSESSMENT OF TIME-OF-FLIGHT BENEFITS ON THE LYSO-BASED DISCOVERY RX PET/CT SCANNER**
Parham Geramifar, Faculty of Physics and Nuclear Engineering, Amir Kabir University of Technology (Tehran Polytechnic), Iran; Mohammad Reza Ay, School of Medicine, Medical Sciences, University of Tehran and Research Center for Science and Technology in Medicine, University of Tehran, Iran; Mojtaba Shamsaei Zafarghandi, Faculty of Physics and Nuclear Engineering, Amir Kabir University of Technology (Tehran Polytechnic), Iran; George Loudos, Department of Medical Instruments Technology, Technological Educational Institute, Greece; Arman Rahmim, Department of Radiology, School of Medicine, Johns Hopkins University, United States

TH-P2a.9 **ACCURATE REGISTRATION AND FAILURE DETECTION IN TISSUE MICRO ARRAY IMAGES**
Musodiq Bello, Ali Can, Xiaodong Tao, General Electric, United States

TH-P2a.10 **FAST AND ROBUST SEGMENTATION OF SPHERICAL PARTICLES IN VOLUMETRIC DATA SETS FROM BRIGHTFIELD MICROSCOPY**
Olaf Ronneberger, Qing Wang, Hans Burkhardt, Universität Freiburg, Germany

TH-P2a.11 **SPATIO-TEMPORAL CELL SEGMENTATION AND TRACKING FOR AUTOMATED SCREENING**
Dirk Padfield, GE Global Research and Rensselaer Polytechnic Institute, United States; Jens Rittscher, GE Global Research, United States; Badrinath Roysam, Rensselaer Polytechnic Institute, United States

TH-P2a.12 **PERFORMANCE EVALUATION OF MULTIRESOLUTION TEXTURE ANALYSIS OF STEM CELL CHROMATIN**
Rami Mangoubi, Mukund Desai, Nathan Lowry, C. S. Draper Laboratory, United States; Paul Sammak, Magee-Womens Research Institute, United States

TP-P2b **Optical tomography** (Poster)
Time: Thursday, May 15, 16:00 - 17:00
Place: Atrium Poster Area

TP-P2b.13 **A SPLINE-BASED FORWARD MODEL FOR OPTICAL DIFFUSE TOMOGRAPHY**
Jean-Charles Baritaux, Seelamantula Chandra Sekhar, Michael Unser, EPFL, Switzerland

TP-P2b.14 **FLUORESCENCE DIFFUSE OPTICAL TOMOGRAPHY: A SIMULATION-BASED STUDY COMPARING TIME-RESOLVED AND CONTINUOUS WAVE RECONSTRUCTIONS PERFORMANCES**
Nicolas Ducros, Anabela Da Silva, Jean-Marc Dinten, CEA/LETI, France; Françoise Peyrin, CREATIS, France

TP-P2b.15 **LOCAL QUALITY ASSESSMENT FOR OPTICAL COHERENCE TOMOGRAPHY**
Peter C. Barnum, Carnegie Mellon University, United States; Mei Chen, Intel Research Pittsburgh, United States; Hiroshi Ishikawa, Gadi Wollstein, Joel Schuman, University of Pittsburgh School of Medicine, United States

TP-P2b.16 **THEORETICAL ANALYSIS OF COMPLEX-CONJUGATE-AMBIGUITY SUPPRESSION IN FREQUENCY-DOMAIN OPTICAL-COHERENCE TOMOGRAPHY**
Seelamantula Chandra Sekhar, Roland Michaely, Ecole Polytechnique Federale de Lausanne, Switzerland; Rainer Leitgeb, Medical University of Vienna, Austria, Austria; Michael Unser, Ecole Polytechnique Federale de Lausanne, Switzerland

TP-P2b.17 **WAVELET-BASED ESTIMATION OF LONG-MEMORY NOISE IN DIFFUSE OPTICAL IMAGING**
Carl Matteau-Pelletier, Mathieu Dehaes, Frédéric Lesage, École Polytechnique de Montréal, Canada; Jean-Marc Lina, École de technologie supérieure, Canada

TP-P2b.18 **MICROSTRUCTURE PRESERVING SYNTHESIS OF BIOMEDICAL IMAGES**
Shantanu Singh, Kishore Mosaliganti, Raghu Machiraju, The Ohio State University, United States

TP-P2c **Brain imaging** (Poster)
Time: Thursday, May 15, 16:00 - 17:00
Place: Atrium Poster Area

TP-P2c.19 **AUTOMATIC CLASSIFICATION OF ALZHEIMER'S DISEASE VS. FRONTOTEMPORAL DEMENTIA: A SPATIAL DECISION TREE APPROACH WITH FDG-PET**
Neda Sadeghi, Norman Foster, Angela Wang, University of Utah, United States; Satoshi Minoshima, University of Washington, United States; Andrew Liebermann, University of Michigan, United States; Tolga Tasdizen, University of Utah, United States

TP-P2c.20 **CLASSIFICATION OF DEMENTIA FROM FDG-PET PARAMETRIC IMAGES USING DATA MINING**
Lingfeng Wen, Michael Bewley, University of Sydney, Australia; Stefan Eberl, Michael Fulham, Royal Prince Alfred Hospital, Australia; Dagan Feng, Hong Kong Polytechnic University, Hong Kong SAR of China

TP-P2c.21 **MRI INTER-PACKET MOVEMENT CORRECTION FOR IMAGES ACQUIRED WITH NON-COMPLEMENTARY DATA**
Elias Gedamu, Abraham Gedamu, Douglas Arnold, Louis Collins, McConnell Brain Imaging Centre, Canada

TP-P2c.22 **IDENTIFYING CORTICAL SULCI FROM LOCALIZATION, SHAPE AND LOCAL ORGANIZATION**
Matthieu Perrot, Denis Rivière, Jean-François Mangin, CEA/ Neurospin, France

TP-P2c.23 **FCD SEGMENTATION USING TEXTURE ASYMMETRY OF MR-T1 IMAGES OF THE BRAIN**
Felipe Bergo, Alexandre Falcão, IC/Unicamp, Brazil; Clarissa Yasuda, Fernando Cendes, FCM/Unicamp, Brazil

TP-P2c.24 **CLUSTERING BY OPTIMUM PATH FOREST AND ITS APPLICATION TO AUTOMATIC GM/WM CLASSIFICATION IN MR-T1 IMAGES OF THE BRAIN**
Fábio Cappabianco, Alexandre Falcão, Leonardo Rocha, University of Campinas, Brazil

(Continued from previous page.)

TP-P2c.25 **MAGNETIC RESONANCE IMAGING (MRI) AND SPECTROSCOPY (MRS) USING SIMULTANEOUS 2-CHANNEL ACQUISITIONS: APPLICATION FOR MOUSE BRAIN EXAMINATION BY RECONFIGURATION OF A "STANDARD" BRUKER SPECTROMETER**
Adrian Rengle, Hélène Ratiney, Adriana Bucur, Sophie Cavassila, Olivier Beuf, CREATIS-LRMN, CNRS UMR 5220, Inserm U630, INSA-Lyon, France

TP-P2c.26 **VARIABILITY OF THE RELATIVE CORPUS CALLOSUM CROSS SECTIONAL AREA BETWEEN DYSLEXIC AND NORMALLY DEVELOPED BRAINS**
Noha El-Zehiry, Manuel Casanova, Adel Elmaghraby, University of Louisville, United States

TP-P2c.27 **AUTOMATED RELIABLE LABELING OF THE CORTICAL SURFACE**
Jing Wan, Aaron Carass, The Johns Hopkins University, United States; Susan M. Resnick, National Institute on Aging, National Institutes of Health, United States; Jerry L. Prince, The Johns Hopkins University, United States

TP-P2c.28 **STATISTICAL DEFORMABLE MODEL APPLIED TO ANATOMICAL LANDMARK DETECTION**
Camille Izard, Bruno Jedynak, Johns Hopkins University, United States

TP-P2c.29 **BRAIN SURFACE CONFORMAL PARAMETERIZATION WITH SLIT MAP**
Yalin Wang, University of California, Los Angeles, United States; Xianfeng Gu, Stony Brook University, United States; Tony F. Chan, Paul M. Thompson, University of California, Los Angeles, United States; Shing-Tung Yau, Harvard University, United States

TP-P2c.30 **FUZZY C-MEANS WITH VARIABLE COMPACTNESS**
Snehashis Roy, Harsh Agarwal, Aaron Carass, Ying Bai, Dzung Pham, Johns Hopkins University, United States; Jerry L. Prince, The Johns Hopkins University, United States

TP-P2c.31 **QUANTITATIVE GENETIC MODELING OF LATERAL VENTRICULAR SHAPE AND VOLUME USING MULTI-ATLAS FLUID IMAGE ALIGNMENT IN TWINS**
Yi-Yu Chou, Natasha Lepore, Marina Barysheva, Ming-Chiang Chang, University of California, Los Angeles, United States; Katie L. McMahon, Greig I. de Zubicaray, Matthew Meredith, University of Queensland, Australia; Margaret J. Wright, Queensland Institute of Medical Research, Australia; Arthur W. Toga, Paul M. Thompson, University of California, Los Angeles, United States

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TP-P2c.32 **BEST INDIVIDUAL TEMPLATE SELECTION FROM DEFORMATION TENSOR MINIMIZATION**
Natasha Lepore, Caroline Brun, Yi-Yu Chou, Agatha D. Lee, Marina Barysheva, University of California, Los Angeles, United States; Greig I. de Zubicaray, Katie L. McMahon, Matthew Meredith, University of Queensland, Australia; Xavier Pennec, INRIA Sophia-Antipolis, France; Margaret J. Wright, Queensland Institute of Medical Research, Australia; Arthur W. Toga, Paul M. Thompson, University of California, Los Angeles, United States

TP-P2c.33 **A TEXTURE-BASED METHODOLOGY FOR IDENTIFYING TISSUE TYPE IN MAGNETIC RESONANCE IMAGES**
Michael Barnathan, Jingjing Zhang, Erickson Miranda, Vasileios Megalooikonomou, Temple University, United States; Scott Faro, Temple University School of Medicine, United States; Harvey Hensley, Fox Chase Cancer Center, United States; Luis Del Valle, Kamel Khalili, Jennifer Gordon, Temple University, United States; Feroze Mohamed, Temple University School of Medicine, United States

TP-P2c.34 **IMPROVED IDQC RECONSTRUCTION FOR INHOMOGENEITY CORRECTED MR SPECTROSCOPY**
Rohini Shankar, Tianliang Gu, Jianhui Zhong, Mathews Jacob, University of Rochester, United States

TP-P2c.35 **G-FACTOR AND GRADIENT WEIGHTED DENOISING WITH EDGE RESTORATION (G-DENOISER) FOR SENSE RECONSTRUCTED MR IMAGES**
Sathya Vijayakumar, University of Utah, United States; Randy Duensing, Feng Huang, Invivo Corporation, United States

TP-P2c.36 **GENERAL LINEAR MODEL AND INFERENCE FOR NEAR INFRARED SPECTROSCOPY USING GLOBAL CONFIDENCE REGION ANALYSIS**
Sungho Tak, Kwang-Eun Jang, Jinwook Jung, Jaeduck Jang, Jong Chul Ye, Korea Advanced Institute of Science and Technology (KAIST), Republic of Korea

TP-P2c.37 **CONSTRUCTION OF A PATIENT-SPECIFIC ATLAS OF THE BRAIN: APPLICATION TO NORMAL AGING**
Anders Ericsson, Paul Aljabar, Daniel Rueckert, Visual Information Processing, Imperial College, United Kingdom

TH-PM2-O1 **Classification in Microscopy** (Oral)
Time: Thursday, May 15, 17:00 - 18:20
Place: La Seine A
Chair: Til Aach

17:00 - 17:20
TH-PM2-O1.1 **CHROMOSOME PAIRING FOR KARYOTYPING PURPOSES USING MUTUAL INFORMATION**
Artem Khmelinskii, Rodrigo Ventura, João Sanches, Instituto de Sistemas e Robótica /Instituto Superior Técnico, Portugal

17:20 - 17:40
TH-PM2-O1.2 **COMBINING MULTIPLE 2V-SVM CLASSIFIERS FOR TISSUE SEGMENTATION**
Yusuf Artan, Xiaolei Huang, Lehigh University, United States

17:40 - 18:00
TH-PM2-O1.3 **DETECTION OF THE DERMIS/EPIDERMIS BOUNDARY IN REFLECTANCE CONFOCAL IMAGES USING MULTI-SCALE CLASSIFIER WITH ADAPTIVE TEXTURE FEATURES**
Sila Kurugol, Jennifer Dy, Northeastern University, United States; Milind Rajadhyaksha, Memorial Sloan-Kettering Cancer Cent., United States; Dana H. Brooks, Northeastern University, United States

18:00 - 18:20
TH-PM2-O1.4 **AUTOMATED GRADING OF BREAST CANCER HISTOPATHOLOGY USING SPECTRAL CLUSTERING WITH TEXTURAL AND ARCHITECTURAL IMAGE FEATURES**
Scott Doyle, Shannon Agner, Anant Madabhushi, Rutgers University, United States; Michael Feldman, John Tomaszewski, University of Pennsylvania, United States

TH-PM2-O2 **Shape Analysis in Microscopy** (Oral)
Time: Thursday, May 15, 17:00 - 18:20
Place: La Seine B
Chair: Josiane Zérubia

17:00 - 17:20
TH-PM2-O2.1 **DEFORMATION-BASED NONLINEAR DIMENSION REDUCTION: APPLICATIONS TO NUCLEAR MORPHOMETRY**
Gustavo K. Rohde, Wei Wang, Tao Peng, Robert F. Murphy, Carnegie Mellon University, United States

17:20 - 17:40
TH-PM2-O2.2 **CAN VORONOI DIAGRAM MODEL CELL GEOMETRIES IN EARLY SEA-URCHIN EMBRYOGENESIS?**
Miguel Angel Luengo-Oroz, Universidad Politécnica de Madrid, Spain; Louise Duloquin, CNRS, France; Carlos Castro, Universidad Politécnica de Madrid, Spain; Thierry Savy, Emmanuel Faure, Benoit Lombardot, Paul Bourgine, Ecole Polytechnique, France; Nadine Peyriéras, CNRS, France; Andrés Santos, Universidad Politécnica de Madrid, Spain

17:40 - 18:00
TH-PM2-O2.3 **PREDICTION OF POTENTIAL LOCATIONS OF FOCAL ADHESIONS ON THE CONTOUR OF ADHERENT CELLS**
Fritz Jetzek, Eleni Mylona, FORTH, Greece; Daphne Manoussaki, FORTH & Technical University of Crete, Greece

18:00 - 18:20
TH-PM2-O2.4 **A SHAPE ANALYSIS FRAMEWORK FOR SMALL ANIMAL PHENOTYPING WITH APPLICATION TO MICE WITH A TARGETED DISRUPTION OF HOXD11**
Joshua Cates, P. Thomas Fletcher, Zachary Warnock, Ross Whitaker, University of Utah, United States

TH-PM2-O3 **Cardiac Imaging: Motion and Strain Analysis** (Oral)
Time: Thursday, May 15, 17:00 - 18:20
Place: La Seine C
Chair: Thomas Denney

17:00 - 17:20
TH-PM2-O3.1 **COMBINING APICAL AND PARASTERNAL VIEWS TO IMPROVE MOTION ESTIMATION IN REAL-TIME 3D ECHOCARDIOGRAPHIC SEQUENCES**
Vicente Grau, Cezary Szmigielski, Harald Becher, J. Alison Noble, University of Oxford, United Kingdom

17:20 - 17:40
TH-PM2-O3.2 **CONTOUR REGULARIZED LEFT VENTRICULAR STRAIN ANALYSIS FROM CINE MRI**
Wei Feng, Thomas S. Denney Jr., Auburn University, United States; Steven Lloyd, Louis Dell'Italia, Himanshu Gupta, Univ. of Alabama at Birmingham, United States

17:40 - 18:00
TH-PM2-O3.3 **CARDIAC FUNCTION ESTIMATION FOR RESYNCHRONIZATION THERAPY: COMPARISON BETWEEN MULTISLICE-CT AND SPECKLE TRACKING IMAGING**
Régis Delaunay, CHU Rennes, INSERM U642, France; Antoine Simon, Alfredo Hernandez, INSERM U642, France; Christophe Leclercq, Erwan Donal, CHU Rennes - INSERM U642, France; Antoine Larralde, CHU Rennes, France; Mireille Garreau, INSERM U642, France

18:00 - 18:20
TH-PM2-O3.4 **NON-TRACKING-BASED 2D STRAIN ESTIMATION IN TAGGED MRI**
Zhen Qian, Dimitris Metaxas, Rutgers University, United States; Leon Axel, New York University, United States

TH-PM2-O4 **Elastography** (Oral)
Time: Thursday, May 15, 17:00 - 18:20
Place: La Seine D
Chair: Elisabeth Brusseau

17:00 - 17:20

TH-PM2-O4.1 **MULTI-FRAME MOTION ESTIMATION FOR FREEHAND ELASTOGRAPHY AND ITS APPLICATION TO THYROID TUMOR IMAGING**
Adrian Basarab, CREATIS-LRMN, France; Andrej Lyshchik, Vanderbilt University Medical Center, United States; Philippe Delachartre, CREATIS-LRMN, France

17:20 - 17:40

TH-PM2-O4.2 **SEGMENTATION OF BREAST CANCER MASSES IN ULTRASOUND USING RADIO-FREQUENCY SIGNAL DERIVED PARAMETERS AND STRAIN ESTIMATES**
Etienne von Lavante, J. Alison Noble, University of Oxford, United Kingdom

17:40 - 18:00

TH-PM2-O4.3 **DEFORMATION IMAGING OF NONINDUCED DOG TUMOR LESIONS DURING FREEHAND SCANNING**
Elisabeth Brusseau, Jean-François Deprez, François Duboeuf, CREATIS, France; Fabienne Rigout-Paulik, ENVL, France; Olivier Basset, CREATIS, France

18:00 - 18:20

TH-PM2-O4.4 **ULTRASOUND STRAIN IMAGING: FROM NANO-SCALE MOTION DETECTION TO MACRO-SCALE FUNCTIONAL IMAGING**
Chris de Korte, Richard Lopata, Maartje Nillesen, Gert Weijers, Nancy van Hees, Inge Gerrits, Christos Katsaros, Livia Kapusta, Johan Thijssen, Radboud University Nijmegen Medical Centre, Netherlands

FR-P1a **fMRI** (Poster)
Time: Friday, May 16, 09:30 - 10:45
Place: Atrium Poster Area

FR-P1a.1 **INCREASED SENSITIVITY IN FMRI GROUP ANALYSIS USING MIXED-EFFECT MODELING**
Merlin Keller, INRIA, France; Alexis Roche, CEA, France

FR-P1a.2 **CONTROLLING THE ERROR IN FMRI: HYPOTHESIS TESTING OR SET ESTIMATION?**
Zachary Harmany, Rebecca Willett, Duke University, United States; Aarti Singh, Robert Nowak, University of Wisconsin-Madison, United States

FR-P1a.3 **GEOMETRIC DISTORTION CORRECTION IN EPI BY PHASE LABELING USING SENSITIVITY ENCODING (PLUS)**
Udomchai Techavipoo, John Lackey, Jianrong Shi, Thomas Leist, Song Lai, Thomas Jefferson University, United States

FR-P1a.4 **INVARIANT 3D SPHARM FEATURES FOR CHARACTERIZING FMRI ACTIVATIONS IN ROIS WHILE MINIMIZING EFFECTS OF INTERSUBJECT ANATOMICAL VARIABILITY**
Ashish Uthama, Rafeef Abugharbieh, Samantha J Palmer, Anthony Traboulsee, Martin J. McKeown, University of British Columbia, India

FR-P1a.5 **FAST PARALLEL IMAGE RECONSTRUCTION USING SMACKER FOR FUNCTIONAL MAGNETIC RESONANCE IMAGING**
Quang Tieng, Viktor Vegh, Gary Cowin, Zhengyi Yang, University of Queensland, Australia

FR-P1a.6 **SENSITIVITY ANALYSIS OF PARCELLATION IN THE JOINT DETECTION-ESTIMATION OF BRAIN ACTIVITY IN FMRI**
Thomas Vincent, Philippe Ciuciu, CEA, France; Bertrand Thirion, INRIA Futurs, France

(Continued from previous page.)

FR-P1a.7 **INFERRING FUNCTIONAL CONNECTIVITY USING SPATIAL MODULATION MEASURES OF FMRI SIGNALS WITHIN BRAIN REGIONS OF INTEREST**
Bernard Ng, Rafeef Abugharbieh, Martin J. McKeown, University of British Columbia, Canada

FR-P1a.8 **SAMPLING STRATEGY FOR PERFUSION QUANTIFICATION USING PASL-MRI**
Patricia Figueiredo, João Sanches, Instituto Superior Tecnico, Portugal

FR-P1a.9 **ACTIVATION DETECTION IN FUNCTIONAL MRI BASED ON NON-SEPARABLE SPACE-TIME NOISE MODELS**
Joonki Noh, The University of Michigan, United States; Victor Solo, The University of New South Wales, Australia

FR-P1a.10 **LIVER METASTASIS EARLY DETECTION USING FMRI BASED STATISTICAL MODEL**
Moti Freiman, The Hebrew Univ. of Jerusalem, Israel; Yifat Edrei, Eitan Gross, Hadassah Hebrew University Medical Center, Israel; Leo Joskowicz, The Hebrew Univ. of Jerusalem, Israel; Rinat Abramovitch, Hadassah Hebrew University Medical Center, Israel

FR-P1a.11 **AN INFORMATION-BASED CLUSTERING APPROACH FOR FMRI ACTIVATION DETECTION**
Lijun Bai, Wei Qin, Jimin Liang, XiDian University, China; Jie Tian, Institute of Automation, Chinese Academy of Sciences, China

FR-P1a.12 **MUTUAL INFORMATION-BASED FEATURE SELECTION ENHANCES FMRI BRAIN ACTIVITY CLASSIFICATION**
Vincent Michel, Cécilia Damon, Bertrand Thirion, INRIA Saclay Parietal, France

FR-P1a.13 **COMPARISON OF TWO DIFFERENT APPROACHES FOR BRAIN ACTIVITY DETECTION IN FMRI: SPM-MAP AND SPM-GLM**
João Sanches, David Afonso, Instituto de Sistemas e Robótica / Instituto Superior Técnico, Portugal; Kestutis Bartnykas, Vilnius Gediminas Technical University, Lithuania; Martin Lauterbach, Faculty of Medicine, University of Lisbon, Portugal

(Continued from previous page.)

FR-P1a.14 **ARTERIAL INPUT FUNCTION: RELEVANCE OF ELEVEN ANALYTICAL MODELS IN DCE-MRI STUDIES**

Daniel Balvay, Laboratoire de Recherche en Imagerie LRI-EA4062, France; Yannick Ponvianne, Michel Claudon, Imagerie Adaptative Diagnostique et Interventionnelle AIDI-EA 4000, France; Charles A Cuenod, Laboratoire de Recherche en Imagerie LRI-EA4062, France

FR-P1a.15 **INFERRING BRAIN DYNAMICS USING GRANGER CAUSALITY ON FMRI DATA**

Guillermo Cecchi, Rahul Garg, Ravishankar Rao, IBM Research, United States

FR-P1a.16 **INTER-SUBJECT VARIABILITY OF RESTING STATE BRAIN ACTIVITY EXPLORED USING A DATA AND MODEL-DRIVEN APPROACH IN COMBINATION WITH EEG-FMRI**

Sonia Goncalves, VU medical centre, Netherlands; Fetsje Bijma, VU Faculty of Sciences, Netherlands; Petra J. W. Pouwels, VU Medical Centre, Netherlands; Marianne A. Jonker, VU Faculty of Sciences, Netherlands; Joost P.A. Kuijer, Rob M. Heethaar, VU Medical Centre, Netherlands; Fernando H. Lopes da Silva, Netherlands Institute for Brain Research, Netherlands; Jan C. de Munck, VU Medical Centre, Netherlands

FR-P1a.17 **TRIANGULATING CORTICAL FUNCTIONAL NETWORKS WITH ANATOMICAL LANDMARKS**

Alan Tucholka, CEA / Neurospin, France; Bertrand Thirion, INRIA Futurs, France; Philippe Pinel, INSERM UNICOG, France; Jean-Baptiste Poline, Jean-François Mangin, CEA / Neurospin, France

FR-P1a.18 **SPATIAL CORRESPONDENCE BASED ASYMMETRY ANALYSIS IN FMRI**

Sandhitsu Das, Department of Radiology, University of Pennsylvania, United States; Dawn Mechanic-Hamilton, Marc Korczykowski, Department of Neurology, University of Pennsylvania, United States; Brian Avants, Department of Radiology, University of Pennsylvania, United States; John Detre, Department of Neurology, University of Pennsylvania, United States; James Gee, Paul Yushkevich, Department of Radiology, University of Pennsylvania, United States

FR-P1b **X-ray computed tomography** (Poster)
Time: Friday, May 16, 09:30 - 10:45
Place: Atrium Poster Area

FR-P1b.19 **PEDIATRIC CRANIAL DEFECT SURFACE ANALYSIS FOR CRANIOSYNOSTOSIS POSTOPERATION CT IMAGES**
Chia-Chi Teng, Brigham Young University, United States; Linda Shapiro, Richard Hopper, Jon Ver Halen, University of Washington, United States

FR-P1b.20 **ESTIMATION OF SHAPE MODEL PARAMETERS FOR 3D SURFACES**
Søren G. H. Erbou, Sune Darkner, Technical University of Denmark, Denmark; Jurgen Fripp, CSIRO ICT Centre, Australia; Sébastien Ourselin, University College London, United Kingdom; Bjarne K. Ersbøll, Technical University of Denmark, Denmark

FR-P1b.21 **A FAST PARALLEL METHOD FOR MEDICAL IMAGING PROBLEMS INCLUDING LINEAR INEQUALITY CONSTRAINTS**
Thomas Capricelli, Laboratoire J.-L. Lions, France

FR-P1b.22 **TOWARD QUANTITATIVE VIRTUAL ANGIOGRAPHY: EVALUATION WITH IN VITRO STUDIES**
Jerome Durant, Philips Research Europe, France; Irina Waechter, University College London, United Kingdom; Roel Hermans, Philips Medical Systems, Netherlands; Juergen Weese, Philips Research Europe, Germany; Til Aach, RWTH Aachen University, Germany

FR-P1b.23 **POLYP DETECTION IN CT COLONOGRAPHY BASED ON SHAPE CHARACTERISTICS AND KULLBACK-LEIBLER DIVERGENCE**
Ju Lynn Ong, Abd-Krim Seghouane, National ICT Australia, Australia; Kevin Osborn, Canberra Imaging Group, Australia

FR-P1b.24 **TEXTURE COORDINATE GENERATION OF COLONIC SURFACE MESHES FOR SURGICAL SIMULATION**
Josh Passenger, Oscar Acosta, Hans de Visser, Sebastian Bauer, Christoph Russ, CSIRO, Australia; Sébastien Ourselin, University College London, United Kingdom

(Continued from previous page.)

FR-P1b.25 **COMPARATIVE ASSESSMENT OF DIFFERENT ENERGY MAPPING METHODS FOR GENERATION OF 511-KEV ATTENUATION MAP FROM CT IMAGES IN PET/CT SYSTEMS: A PHANTOM STUDY**
Maryam Shirmohammad, Mohammad Reza Ay, Saeed Sarkar, Deptartment of Medical Physics and Biomedical Engineering, School of Medicine, Medical Sciences/ University of Tehran and Research Center for Science and Technology in Medicine, Medical Sciences/ University of Tehran, Iran; Hossein Ghadiri, Research Center for Science and Technology in Medicine, Medical Sciences/ University of Tehran, Iran; Arman Rahmim, Department of Radiology, School of Medicine, Johns Hopkins University, United States

FR-P1b.26 **RIBCAGE CHARACTERIZATION FOR FE USING AUTOMATIC CT PROCESSING**
Sven Holcombe, Susumu Ejima, Japan Automobile Research Institute, Japan; Hannu Huhdanpaa, Alexander Jones, Stewart C. Wang, University of Michigan, United States

FR-P1b.27 **TEXTURE ANALYSIS OF 3D BLADDER CANCER CT IMAGES FOR IMPROVING RADIOTHERAPY PLANNING**
William Nailon, Anthony Redpath, Duncan McLaren, The University of Edinburgh, United Kingdom

FR-P1b.28 **REDUCING FALSE POSITIVE RESPONSES IN LUNG NODULE DETECTOR SYSTEM BY ASYMMETRIC ADABOOST**
Martin Dolejsi, Jan Kybic, Czech Technical University, Czech Republic; Stanislav Tuma, Michal Polovincak, Faculty Hospital, Motol, Czech Republic

FR-P1b.29 **A STATISTICAL IMAGE-BASED APPROACH FOR THE 3D RECONSTRUCTION OF THE SCOLIOTIC SPINE FROM BIPLANAR RADIOGRAPHS**
Samuel Kadoury, Farida Cheriet, Ecole Polytechnique of Montreal, Canada; Hubert Labelle, Sainte-Justine Hospital, Canada

FR-P1b.30 **KNEE RECONSTRUCTION THROUGH EFFICIENT LINEAR PROGRAMMING**
Mihai Sardarescu, Ecole Polytechnique, France; Nikos Paragios, Nikos Komodakis, Ecole Centrale de Paris, France; Remy Raymond, Phillipe Hernigou, Alain Rahmouni, Hopital Henri Mondor, France

FR-P1b.31 **MATHEMATICAL MODELING OF ANATOMICAL STRUCTURES BY MEANS OF SPHERICAL HARMONICS**
Detlef Richter, Soulimane Abdellaoui, Faisel Bekkaoui, Wiesbaden University of Applied Sciences, Germany; Vlad Monescu, Transilvania University of Brasov, Romania; Gerd Strassmann, University of Marburg, Germany

(Continued from previous page.)

FR-P1b.32 **AUTOMATIC DETECTION OF LIVER TUMORS**
Daniel Pescia, Ecole Centrale Paris, Intrasense, France; Nikos Paragios, Ecole Centrale Paris, France; Stéphane Chemouny, Intrasense, France

FR-P1b.33 **IMAGE-BASED SIMULATION OF BRAIN ARTERIOVENOUS MALFORMATION HEMODYNAMICS**
Piotr Orlowski, J. Alison Noble, Yiannis Ventikos, James Byrne, Paul Summers, University of Oxford, United Kingdom

FR-P1b.34 **TOMOSYNTHESIS-BASED RADIOACTIVE SEED LOCALIZATION IN PROSTATE BRACHYTHERAPY USING MODIFIED DISTANCE MAP IMAGES**
Junghoon Lee, Xiaofeng Liu, Johns Hopkins University, United States; Ameet Jain, Philips Research North America, United States; Jerry L. Prince, The Johns Hopkins University, United States; Gabor Fichtinger, Queen's University, Canada

FR-P1b.35 **MASSIVE-TRAINING ARTIFICIAL NEURAL NETWORKS FOR CAD FOR DETECTION OF POLYPS IN CT COLONOGRAPHY: FALSE-NEGATIVE CASES IN A LARGE MULTICENTER CLINICAL TRIAL**
Kenji Suzuki, Mark Epstein, Ivan Sheu, Ryan Kohlbrenner, The University of Chicago, United States; Don Rockey, The University of Texas Southwestern Medical Center, United States; Abraham Dachman, The University of Chicago, United States

FR-P1b.36 **SAMPLING STRATEGIES IN MULTIPLE-IMAGE RADIOGRAPHY**
Keivan Majidi, Jovan Brankov, Miles Wernick, Illinois Institute of Technology, United States

FR-AM-O1 **DTI** (Oral)
Time: Friday, May 16, 10:45 - 12:45
Place: La Seine A
Chair: Habib Benali

10:45 - 11:09

FR-AM-O1.1 **ADAPTIVE MEAN-SHIFT REGISTRATION OF WHITE MATTER TRACTOGRAPHIES**
Orly Zvitia, Arnaldo Mayer, Hayit Greenspan, Tel-Aviv University, Israel

11:09 - 11:33

FR-AM-O1.2 **DETECTION OF MULTIPLE PATHWAYS IN THE SPINAL CORD WHITE MATTER USING Q-BALL IMAGING**
Julien Cohen-Adad, INSERM U678 / Université de Montréal, Canada; Maxime Descoteaux, Odyssée Project Team, INRIA/ ENPC/ENS, INRIA Sophia Antipolis, Canada; Serge Rossignol, GRSNC, Department of Physiology, Faculty of Medicine, Université de Montréal, Montreal, QC, Canada, Canada; Richard D. Hoge, Unité de Neuroimagerie Fonctionnelle, CRIUGM, Université de Montréal, Montreal, QC, Canada, Canada; Rachid Deriche, Odyssée Project Team, INRIA/ENPC/ ENS, INRIA Sophia Antipolis, Canada; Habib Bénali, INSERM U678, Université Pierre et Marie Curie (Paris VI), CHU Pitié-Salpêtrière, France

11:33 - 11:57

FR-AM-O1.3 **DTI REGISTRATION WITH EXACT FINITE-STRAIN DIFFERENTIAL**
Boon Thye Thomas Yeo, Masschusetts Institute of Technology, United States; Tom Vercauteren, INRIA Sophia Antipolis & Mauna Kea Technologies, France; Pierre Fillard, Xavier Pennec, INRIA Sophia Antipolis, France; Polina Golland, Masschusetts Institute of Technology, United States; Nicholas Ayache, Olivier Clatz, INRIA Sophia Antipolis, France

11:57 - 12:21

FR-AM-O1.4 **MANIFOLD BASED MORPHOMETRY APPLIED TO SCHIZOPHRENIA**
Ragini Verma, Parmeshwar Khurd, James Loughead, Raquel Gur, Ruben Gur, Christos Davatzikos, University of Pennsylvania, United States

12:21 - 12:45

FR-AM-O1.5 **SURFACE-BASED MODELING OF WHITE MATTER FASCICULI WITH ORIENTATION ENCODING**
Hui Zhang, Paul Yushkevich, University of pennsylvania, United States; Tony Simon, University of California, Davis, United States; James Gee, University of pennsylvania, United States

FR-AM-O2 **Segmentation in microscopy** (Oral)
Time: Friday, May 16, 10:45 - 12:45
Place: La Seine B
Chair: Marie-Pierre Jolly

10:45 - 11:09
FR-AM-O2.1 **AUTOMATIC CELL SEGMENTATION FROM CONFOCAL MICROSCOPY IMAGES OF THE ARABIDOPSIS ROOT**
Monica Marcuzzo, Pedro Quelhas, INEB-Instituto de Engenharia Biomedica, Portugal; Ana Campilho, Institute of Biotechnology, University of Helsinki, Finland; Ana Maria Mendonça, Aurélio Campilho, INEB-Instituto de Engenharia Biomedica, Portugal

11:09 - 11:33
FR-AM-O2.2 **AN EFFICIENT ALGORITHM FOR MULTIPLE POLONY DETECTION**
H. Leandro Cortes, Gregory Snyder, The University of Chicago, United States

11:33 - 11:57
FR-AM-O2.3 **SIFT-BASED SEQUENCE REGISTRATION AND FLOW-BASED CORTICAL VESSEL SEGMENTATION APPLIED TO HIGH RESOLUTION OPTICAL IMAGING DATA**
Mickaël Pechaud, Ecole Normale Supérieure, France; Ivo Vanzetta, CNRS, France; Thomas Deneux, Weizmann Institute of Science, Israel; Renaud Keriven, École des ponts, France

11:57 - 12:21
FR-AM-O2.4 **PHASE CONTRAST IMAGE SEGMENTATION BY WEAK WATERSHED TRANSFORM ASSEMBLY**
Olivier Debeir, Ivan Adanja, Nadine Warzée, Philippe Van Ham, Christine Decaestecker, Faculty of Applied Sciences, Université Libre de Bruxelles, Belgium

12:21 - 12:45
FR-AM-O2.5 **UNSUPERVISED SEGMENTATION OF CELL NUCLEI USING GEOMETRIC MODELS**
Shaun Fitch, Trevor Jackson, Peter Andras, Craig Robson, Newcastle University, United Kingdom

FR-AM-O3 **Deconvolution and Denoising of Microscopy Images** (Oral)
Time: Friday, May 16, 10:45 - 12:45
Place: La Seine D
Chair: Erik Meijering

10:45 - 11:09
FR-AM-O3.1 **DECONVOLUTION OF 3D FLUORESCENCE MICROGRAPHS WITH AUTOMATIC RISK MINIMIZATION**
Sathish Ramani, Cédric Vonesch, Michael Unser, Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland

11:09 - 11:33
FR-AM-O3.2 **DECONVOLUTION OF CONFOCAL MICROSCOPY IMAGES USING PROXIMAL ITERATION AND SPARSE REPRESENTATIONS**
François-Xavier Dupé, Jalal Fadili, GREYC UMR CNRS 6072, France; Jean-Luc Starck, DAPNIA/SEDI-SAP CEA-Saclay, France

11:33 - 11:57
FR-AM-O3.3 **BLIND DECONVOLUTION FOR DIFFRACTION-LIMITED FLUORESCENCE MICROSCOPY**
Praveen Pankajakshan, INRIA Sophia-Antipolis, France; Bo Zhang, Institut Pasteur, France; Laure Blanc-Feraud, INRIA Sophia-Antipolis, France; Zvi Kam, Weizmann Institute of Science,, Israel; Jean-Christophe Olivo-Marin, Institut Pasteur, France; Josiane Zerubia, INRIA Sophia-Antipolis, France

11:57 - 12:21
FR-AM-O3.4 **INHOMOGENEOUS DECONVOLUTION IN A BIOLOGICAL IMAGES CONTEXT.**
Arnaud Ogier, Thierry Dorval, Auguste Genovesio, Institut Pasteur Korea, Republic of Korea

12:21 - 12:45
FR-AM-O3.5 **NON-PARAMETRIC REGRESSION FOR PATCH-BASED FLUORESCENCE MICROSCOPY IMAGE SEQUENCE DENOISING**
Jerome Boulanger, Jean-Baptiste Sibarita, Institut Curie, France; Charles Kervrann, INRIA-IRISA/INRA/MIA, France; Patrick Bouthemy, INRIA-IRISA, France

FR-AM-O4 **Reconstruction** (Oral)
Time: Friday, May 16, 10:45 - 12:45
Place: La Seine C
Chair: Dana Brooks

10:45 - 11:09
FR-AM-O4.1 **JOINT RECONSTRUCTION OF NOISY HIGH-RESOLUTION MR IMAGE SEQUENCES**
Justin Haldar, Zhi-Pei Liang, University of Illinois at Urbana-Champaign, United States

11:09 - 11:33
FR-AM-O4.2 **AUTOCALIBRATED REGULARIZED PARALLEL MRI RECONSTRUCTION IN THE WAVELET DOMAIN**
Lofti Chaari, Jean-Christophe Pesquet, Amel Benazza-Benyahia, Univ. Paris Est, France; Philippe Ciuciu, CEA, France

11:33 - 11:57
FR-AM-O4.3 **FLUORESCENCE TOMOGRAPHY: RECONSTRUCTION BY ITERATIVE METHODS**
Eduardo Miqueles, Alvaro De Pierro, Unicamp, Brazil

11:57 - 12:21
FR-AM-O4.4 **CORRECTION OF SOME TIME-DEPENDENT DEFORMATIONS IN PARALLEL-BEAM COMPUTED TOMOGRAPHY**
Colas Schretter, Christoph Neukirchen, Matthias Bertram, Philips Research Europe - Aachen., Germany; Georg Rose, Otto-von-Guericke University - Magdeburg, Germany

12:21 - 12:45
FR-AM-O4.5 **TOMOGRAPHIC IMAGE RECONSTRUCTION FROM LIMITED-VIEW PROJECTIONS WITH WIENER FILTERED FOCUSS ALGORITHM**
Rafal Zdunek, Wroclaw University of Technology, Poland; Zhaoshui He, Andrzej Cichocki, RIKEN Brain Science Institute, Japan

FR-PM1-O1 **Registration** (Oral)
Time: Friday, May 16, 14:00 - 16:00
Place: La Seine A
Chair: Franjo Pernus

14:00 - 14:20
FR-PM1-O1.1 **POINT-SET REGISTRATION OF TAGGED HE-3 IMAGES USING A STRUCTURALLY-BASED JENSEN-SHANNON DIVERGENCE MEASURE WITHIN A DETERMINISTIC ANNEALING FRAMEWORK**
Nicholas Tustison, Suyash Awate, University of Pennsylvania, United States; Jing Cai, University of Virginia, United States; Talissa Altes, University of Pennsylvania, United States; G. Wilson Miller, Eduard de Lange, John Mugler III, University of Virginia, United States; James Gee, University of Pennsylvania, United States

14:20 - 14:40
FR-PM1-O1.2 **INVESTIGATING IMPLICIT SHAPE REPRESENTATIONS FOR ALIGNMENT OF LIVERS FROM SERIAL CT EXAMINATIONS**
Nathan Cahill, Grace Vesom, University of Oxford, United Kingdom; Lena Gorelick, Weizmann Institute of Science, Israel; Joanne Brady, Churchill Hospital, United Kingdom; J. Alison Noble, Michael Brady, University of Oxford, United Kingdom

14:40 - 15:00
FR-PM1-O1.3 **INTENSITY-BASED REGISTRATION OF PROSTATE BRACHYTHERAPY IMPLANTS AND ULTRASOUND**
Zahra Karimaghaloo, Gabor Fichtinger, David Gobbi, Queen's University, Canada; Clif Burdette, Acoustic MedSystems, United States; Robert Rohling, University of British Columbia, Canada; Purang Abolmaesumi, Queen's University, Canada

15:00 - 15:20
FR-PM1-O1.4 **A NOVEL APPROACH FOR GLOBAL REGISTRATION OF MEDICAL IMAGES BASED ON LEARNING THE PRIOR APPEARANCE MODEL**
Ayman El-Baz, University of Louisville, United States; Georgy Gimel'farb, University of Auckland, New Zealand

15:20 - 15:40
FR-PM1-O1.5 **A LANDMARK-BASED NONLINEAR ELASTICITY MODEL FOR MOUSE ATLAS REGISTRATION**
Tungyou Lin, University of California, Los Angeles, United States; Erh-Fang Lee, Ivo Dinov, UCLA School of Medicine, United States; Carole Le Guyader, IRMAR, INSA de Rennes, France; Paul M. Thompson, UCLA School of Medicine, United States; Arthur W. Toga, Luminita Vese, University of California, Los Angeles, United States

15:40 - 16:00
FR-PM1-O1.6 **FAST NO GROUND TRUTH IMAGE REGISTRATION ACCURACY EVALUATION: COMPARISON OF BOOTSTRAP AND HESSIAN APPROACHES**
Jan Kybic, Czech Technical University, Czech Republic

FR-PM1-O2 **Cancer imaging** (Oral)
Time: Friday, May 16, 14:00 - 16:00
Place: La Seine D
Chair: Mathews Jacob

14:00 - 14:20
FR-PM1-O2.1 **3D GENERAL LESION SEGMENTATION IN CT**
Marie-Pierre Jolly, Leo Grady, Siemens Corporate Research, United States

14:20 - 14:40
FR-PM1-O2.2 **SPATIALLY CONSTRAINED SEGMENTATION OF DERMOSCOPY IMAGES**
Howard Zhou, Georgia Institute of Technology, United States; Mei Chen, Le Zou, Richard Gass, Intel Research Pittsburgh, United States; Laura Ferris, Laura M. Drogowski, University of PIttsburgh, United States; James M. Rehg, Georgia Institute of Technology, United States

14:40 - 15:00
FR-PM1-O2.3 **LIVER TUMOR ASSESSMENTWITH DCE-MRI**
Liliana Caldeira, João Sanches, Instituto de Sistemas e Robótica / Universidade Tecnica de Lisboa, Portugal

15:00 - 15:20
FR-PM1-O2.4 **AUTOMATED EVALUATION OF HER-2/NEU IMMUNOHISTOCHEMICAL EXPRESSION IN BREAST CANCER USING DIGITAL MICROSCOPY**
Marios Gavrielides, Hela Masmoudi, Nicholas Petrick, Kyle Myers, Stephen Hewitt, FDA, United States

15:20 - 15:40
FR-PM1-O2.5 **MONITORING SLOWLY EVOLVING TUMORS**
Ender Konukoglu, INRIA - Sophia Antipolis, France; William M. Wells, Harvard Medical School, United States; Sebastien Novellas, Nicholas Ayache, INRIA - Sophia Antipolis, France; Ron Kikinis, Peter M. Black, Kilian M. Pohl, Harvard Medical School, United States

15:40 - 16:00
FR-PM1-O2.6 **BREAST CANCER DETECTION BY TIME REVERSAL IMAGING**
Yuanwei Jin, Jose' M. F. Moura, Yi Jiang, Carnegie Mellon University, United States; Michael Wahl, He Zhu, University of Pittsburgh, United States; Qiuhong He, University of Pittsburgh Medical Center, United States

FR-PM-SFS1 Advanced Visualization and Graphics for Biomedical Application (Special Session)
Time: Friday, May 16, 14:00 - 16:00
Place: La Seine B
Organizer and Chair: Torsten Möller

14:00 - 14:20
FR-PM-SFS1.1 INTEGRATING VOLUME VISUALIZATION TECHNIQUES INTO MEDICAL APPLICATIONS
Stefan Bruckner, Peter Kohlmann, Vienna University of Technology, Austria; Armin Kanitsar, AGFA HealthCare, Austria; Eduard Gröller, Vienna University of Technology, Austria

14:20 - 14:40
FR-PM-SFS1.2 VISUALIZING MORPHOGENESIS AND GROWTH BY TEMPORAL INTERPOLATION OF SURFACE-BASED 3D ATLASES
Chavdar Papazov, Vincent Dercksen, Hans Lamecker, Hans-Christian Hege, Zuse Institute Berlin, Germany

14:40 - 15:00
FR-PM-SFS1.3 GEOMETRY-DRIVEN VISUALIZATION OF MICROSCOPIC STRUCTURES IN BIOLOGY
Kishore Mosaliganti, Raghu Machiraju, Kun Huang, The Ohio State University, United States

15:00 - 15:20
FR-PM-SFS1.4 MANAGING UNCERTAINTY IN VISUALIZATION AND ANALYSIS OF MEDICAL DATA
Joe Kniss, University of New Mexico, United States

15:20 - 15:40
FR-PM-SFS1.5 CUDA: SCALABLE PARALLEL PROGRAMMING FOR HIGH-PERFORMANCE SCIENTIFIC COMPUTING
David Luebke, NVIDIA, United States

ISBI 2008 organizers are pleased to acknowledge the support of Leica Microsystems and of the program Leica Scientific Forum.

FR-PM-SFS2 In Vivo Microscopic Image Analysis (Special Session)
Time: Friday, May 16, 14:00 - 16:00
Place: La Seine C
Organizers and Chairs: Grégoire Malandain and Erik Meijering

14:00 - 14:20
FR-PM-SFS2.1 FROM PARTICLE TRACKING TO MOLECULAR INTERACTIONS
Khuloud Jaqaman, The Scripps Research Institute, United States

14:20 - 14:40
FR-PM-SFS2.2 MINIMAL PATHS AND PROBABLISTIC MODELS FOR ORIGIN-DESTINATION TRAFFIC ESTIMATION IN LIVE CELL IMAGING
Thierry Pecot, Charles Kervrann, INRIA-INRA, France; Patrick Bouthemy, INRIA, France

14:40 - 15:00
FR-PM-SFS2.3 COMPUTER VISION TRACKING OF STEMNESS
Kang Li, Eric Miller, Carnegie Mellon University, United States; Mei Chen, Intel Research Pittsburgh, United States; Takeo Kanade, Lee Weiss, Phil Campbell, Carnegie Mellon University, United States

15:00 - 15:20
FR-PM-SFS2.4 DETECTION OF FULL LENGTH MICROTUBULES IN LIVE MICROSCOPY IMAGES
Sylvain Berlemont, Institut Pasteur / Genomic Vision, France; Régis Tournebize, Institut Pasteur, France; Aaron Bensimon, Genomic Vision, France; Jean-Christophe Olivo-Marin, Institut Pasteur, France

15:20 - 15:40
FR-PM-SFS2.5 DOUBLE TIME-SCALE IMAGE RECONSTRUCTION OF THE BEATING AND DEVELOPING EMBRYONIC ZEBRAFISH HEART
Michael Liebling, University of California, Santa Barbara, United States; Julien Vermot, Scott E. Fraser, California Institute of Technology, United States

15:40 - 16:00
FR-PM-SFS2.6 AUTOMATIC SUMMARIZATION OF CHANGES IN IMAGE SEQUENCES USING ALGORITHMIC INFORMATION THEORY
Andrew Cohen, Christopher Bjornsson, Ying Chen, Rensselaer Polytechnic Institute, United States; Gary Banker, Oregon Health and Science University, United States; Ena Ladi, Ellen Robey, University of California, Berkeley, United States; Sally Temple, Albany Medical Center, United States; Badrinath Roysam, Rensselaer Polytechnic Institute, United States

ISBI 2008 organizers are pleased to acknowledge the support of Zeiss NTS/Electron Microscopy and MicroImaging/Light Microscopy divisions.

FR-P2a **DTI** (Poster)
Time: Friday, May 16, 16:00 - 17:00
Place: Atrium Poster Area

FR-P2a.1 **THE TENSOR DISTRIBUTION FUNCTION**
Alex Leow, Siwei Zhu, University of California, Los Angeles, United States; Katie L. McMahon, Greig I. de Zubicaray, Matthew Meredith, Margaret J. Wright, University of Queensland, Australia; Paul M. Thompson, University of California, Los Angeles, United States

FR-P2a.2 **ROBUST MAXIMUM LIKELIHOOD ESTIMATION IN Q-SPACE MRI**
Bennett Landman, Johns Hopkins University School of Medicine, United States; Jonathan Farrell, Johns Hopkins University, United States; Seth Smith, Kennedy Krieger Institute, United States; Peter Calabresi, Johns Hopkins University School of Medicine, United States; Peter van Zijl, Kennedy Krieger Institute, United States; Jerry L. Prince, Johns Hopkins University School of Medicine, United States

FR-P2a.3 **MAPPING GENETIC INFLUENCES ON BRAIN FIBER ARCHITECTURE WITH HIGH ANGULAR RESOLUTION DIFFUSION IMAGING (HARDI)**
Ming-Chang Chiang, Marina Barysheva, Agatha D. Lee, Sarah K. Madsen, Andrea D. Klunder, Arthur W. Toga, University of California, Los Angeles, United States; Katie L. McMahon, Greig I. de Zubicaray, Matthew Meredith, University of Queensland, Australia; Margaret J. Wright, Queensland Institute of Medical Research, Australia; Anuj Srivastava, Nikolay Balov, Florida State University, United States; Paul M. Thompson, University of California, Los Angeles, United States

FR-P2a.4 **REGULARIZED SUPER-RESOLUTION FOR DIFFUSION MRI**
Shahrum Nedjati-Gilani, University College London, United Kingdom; Geoff J. M. Parker, University of Manchester, United Kingdom; Daniel Alexander, University College London, United Kingdom

FR-P2a.5 **ATLAS BASED SEGMENTATION OF WHITE MATTER FIBER BUNDLES IN DTMRI USING FRACTIONAL ANISOTROPY AND PRINCIPAL EIGEN VECTORS**
Esmaeil Davoodi-Bojd, Control and Intelligent Processing Center of Excellence, School of Electrical and Computer Engineering, University of Tehran, Iran; Hamid Soltanian-Zadeh, Image Analysis Laboratory, Radiology Department, Henry Ford Hospital, United States

FR-P2a.6 **A GLOBAL APPROACH TO CARDIAC TRACTOGRAPHY**
Carole Frindel, Joël Schaerer, Pierre Gueth, Patrick Clarysse, Yue-Min Zhu, Marc Robini, University of Lyon, France

(Continued from previous page.)

FR-P2a.7 **ON THE NON-UNIFORM COMPLEXITY OF BRAIN CONNECTIVITY**
Gloria Haro, Universitat Politècnica de Catalunya, Spain; Christophe Lenglet, Siemens Corporate Research, United States; Guillermo Sapiro, University of Minnesota, United States; Paul M. Thompson, UCLA School of Medicine, United States

FR-P2a.8 **RANDOM WALK MODEL BASED ON DTI FOR PREDICTING THE MICROSCOPIC SPREAD OF GLIOMAS**
Anitha Priya Krishnan, Delphine Davis, Paul Okunieff, Walter O'Dell, University of Rochester, United States

FR-P2a.9 **AUTOMATICALLY IDENTIFYING WHITE MATTER TRACTS USING CORTICAL LABELS**
John Bogovic, Aaron Carass, Jing Wan, Bennett Landman, Jerry L. Prince, The Johns Hopkins University, United States

FR-P2a.10 **A STATISTICAL FRAMEWORK TO CHARACTERISE MICROSTRUCTURE IN HIGH ANGULAR RESOLUTION DIFFUSION IMAGING**
Sofia Olhede, University College London, United Kingdom; Brandon Whitcher, GlaxoSmithKline, United Kingdom

FR-P2a.11 **CONNECTIVITY-BASED PARCELLATION OF THE CORTICAL SURFACE USING Q-BALL IMAGING**
Pamela Guevara, CEA, Neurospin, Gif-sur-Yvette, France; Muriel Perrin, GE Healthcare, Buc, France, France; Pascal Cathier, Yann Cointepas, Denis Rivière, Cyril Poupon, Jean-François Mangin, CEA, Neurospin, Gif-sur-Yvette, France

FR-P2a.12 **ESTIMATION OF UNCERTAINTY IN CONSTRAINED SPHERICAL DECONVOLUTION FIBER ORIENTATIONS**
Ben Jeurissen, University of Antwerp, Belgium; Alexander Leemans, Cardiff University, United Kingdom; Jacques-Donald Tournier, Brain Research Institute, Australia; Jan Sijbers, University of Antwerp, Belgium

FR-P2a.13 **FAST DISPLACEMENT PROBABILITY PROFILE APPROXIMATION FROM HARDI USING 4TH-ORDER TENSORS**
Angelos Barmpoutis, Baba C. Vemuri, John R. Forder, University of Florida, United States

(Continued from previous page.)

FR-P2a.14 **VALIDATION OF MODELS FOR THE DIFFUSION WEIGHTED MR SIGNAL IN BRAIN WHITE MATTER**
Els Fieremans, MEDISIP, Ghent University-IBBT-IBiTech, Belgium; Yves De Deene, QMRI - MEDISIP, Ghent University Hospital, Belgium; Ignace Lemahieu, MEDISIP, Ghent University-IBBT-IBiTech, Belgium

FR-P2a.15 **BUNDLES OF INTEREST BASED REGISTRATION OF WHITE MATTER TRACTOGRAPHIES**
Arnaldo Mayer, Hayit Greenspan, Tel-Aviv university, Israel

FR-P2a.16 **SUPPORT VECTOR DRIVEN MARKOV RANDOM FIELDS TOWARDS DTI SEGMENTATION OF THE HUMAN SKELETAL MUSCLE**
Radhouene Neji, Ecole Centrale Paris/ INRIA Saclay/Supelec, France; Gilles Fleury, Supelec, France; Jean Francois Deux, Alain Rahmouni, Guillaume Bassez, CHU Henri Mondor, France; Alexandre Vignaud, Siemens Medical Solutions, France; Nikos Paragios, Ecole Centrale Paris/INRIA Saclay, France

FR-P2a.17 **DIRECTIONAL FUNCTIONS FOR ORIENTATION DISTRIBUTION ESTIMATION**
Yogesh Rathi, Harvard Medical School, United States; Oleg Michailovich, University of Waterloo, Canada; Sylvain Bouix, Martha Shenton, Harvard Medical School, United States

FR-P2a.18 **A GENERAL INTERPOLATION METHOD FOR SYMMETRIC SECOND-RANK TENSORS IN TWO DIMENSIONS**
Susana Merino-Caviedes, Marcos Martín-Fernández, Laboratory of Image Processing, Spain

FR-P2a.19 **REGULARIZATION OF DIFFUSION TENSOR IMAGES**
Jaime Cisternas, Universidad de los Andes, Chile; Takeshi Asahi, Marcelo Gálvez, Gonzalo Rojas, Universidad de Chile, Chile

FR-P2a.20 **ON APPROXIMATION OF ORIENTATION DISTRIBUTIONS BY MEANS OF SPHERICAL RIDGELETS**
Oleg Michailovich, University of Waterloo, Canada; Yogesh Rathi, Harvard Medical School, United States

(Continued from previous page.)

FR-P2a.21 **COMPARISON OF FRACTIONAL AND GEODESIC ANISOTROPY IN DIFFUSION TENSOR IMAGES OF 90 MONOZYGOTIC AND DIZYGOTIC TWINS**
Agatha D. Lee, Natasha Lepore, Marina Barysheva, Yi-Yu Chou, Caroline Brun, Sarah K. Madsen, University of California, Los Angeles, United States; Katie L. McMahon, Greig Zubicaray, Matthew Meredith, Margaret J. Wright, University of Queensland, Australia; Author Toga, Paul M. Thompson, University of California, Los Angeles, United States

FR-P2a.22 **MODEL-BASED REGISTRATION TO CORRECT FOR MOTION BETWEEN ACQUISITIONS IN DIFFUSION MR IMAGING**
Yu Bai, Daniel Alexander, University College London, United Kingdom

FR-P2a.23 **ATLAS-GUIDED PROBABILISTIC DIFFUSION-TENSOR FIBER TRACTOGRAPHY**
Philip Cook, Hui Zhang, Suyash Awate, James Gee, University of Pennsylvania, United States

FR-P2a.24 **TWO NOVEL METHODS FOR COMPUTING THE 3D CARDIAC MIDWALL**
Ryan Dickie, Mirza Faisal Beg, Simon Fraser University, Canada

FR-P2b **Biological image analysis** (Poster)
Time: Friday, May 16, 16:00 - 17:00
Place: Atrium Poster Area

FR-P2b.25 **A SEMI-AUTOMATIC METHOD FOR NEURON CENTERLINE EXTRACTION IN CONFOCAL MICROSCOPIC IMAGE STACK**
Ping-Chang Lee, Yu-Tai Ching, National Chiao Tung University, Taiwan; H. M. Chang, Ann-Shyn Chiang, National Tsing Hua University, Taiwan

FR-P2b.26 **CHARACTERIZATION OF SPATIAL ORDERING OF CORNEAL STROMA FIBERS**
David Freund, Philippe Burlina, Amit Banerjee, JHU APL, United States

FR-P2b.27 **3D REGION GROWING INTEGRATING ADAPTIVE SHAPE PRIOR**
Jean-Loïc Rose, Chantal Revol-Muller, CREATIS-LRMN, France; Jean-Baptiste Langlois, Marc Janier, ANIMAGE, France; Christophe Odet, CREATIS-LRMN, France

FR-P2b.28 **AUTOMATIC CELL RECOGNITION IN IMMUNOHISTOCHEMICAL GASTRITIS STAINS USING SEQUENTIAL THRESHOLDING AND SVM NETWORK**
Tomasz Markiewicz, Warsaw University of Technology, Poland; Cezary Jochymski, Robert Koktysz, Wojciech Kozlowski, Military Institute of the Health Services, Poland

FR-P2b.29 **A NEW FILTER FOR SPOT EXTRACTION IN N-DIMENSIONAL BIOLOGICAL IMAGING**
Eric Biot, Elizabeth Crowell, Herman Höfte, Yves Maurin, Samantha Vernhettes, Philippe Andrey, INRA, France

FR-P2b.30 **MULTIRESOLUTION IDENTIFICATION OF GERM LAYER COMPONENTS IN TERATOMAS DERIVED FROM HUMAN AND NONHUMAN PRIMATE EMBRYONIC STEM CELLS**
Amina Chebira, Carnegie Mellon University, United States; John A. Ozolek, Children's Hospital of Pittsburgh, University of Pittsburgh, United States; Carlos A. Castro, Magee-Womens Research Institute and Foundation, Univeristy of Pittsbrugh, United States; William G. Jenkinson, Johns Hopkins University, United States; Mukta Gore, Ramamurthy Bhagavatula, Irina Khaimovich, Shauna E. Ormon, Carnegie Mellon University, United States; Christopher S. Navara, Meena Sukhwani, Kyle E. Orwig, Ahmi Ben-Yehudah, Gerald Schatten, Magee-Womens Research Institute and Foundation, Univeristy of Pittsbrugh, United States; Gustavo K. Rohde, Jelena Kovacevic, Carnegie Mellon University, United States

(Continued from previous page.)

FR-P2b.31 **FLEXIBLE IMAGE REGISTRATION FOR THE IDENTIFICATION OF BEST FITTED PROTEIN MODELS IN 3D-EM MAPS**
Laura Fernández-de-Manuel, María J. Ledesma-Carbayo, Universidad Politécnica de Madrid, Spain; Julián Atienza-Herrero, Carlos O. S. Sorzano, José-María Carazo, Centro Nacional de Biotecnología, Spain; Andrés Santos, Universidad Politécnica de Madrid, Spain

FR-P2b.32 **THREE-DIMENSIONAL RECONSTRUCTION OF SERIAL HISTOLOGICAL MOUSE BRAIN SECTIONS**
M. Mallar Chakravarty, Barry J. Bedell, Simone P. Zehntner, Alan C. Evans, D. Louis Collins, McConnell Brain Imaging Center, Canada

FR-P2b.33 **FULLY AUTOMATIC 3D RECONSTRUCTION OF HISTOLOGICAL IMAGES**
Ulas Bagci, Li Bai, Collaborative Medical Image Analysis on Grid, United Kingdom

FR-P2b.34 **TRACKING OF CELLS IN A SEQUENCE OF IMAGES USING A LOW-DIMENSION IMAGE REPRESENTATION**
Maël Primet, Alice Demarez, François Taddei, Ariel Lindner, Lionel Moisan, Paris Descartes University, France

FR-P2b.35 **CLASSIFICATION OF BREAST-TISSUE MICROARRAY SPOTS USING COLOUR AND LOCAL INVARIANTS**
Telmo Amaral, Stephen McKenna, Katherine Robertson, Alastair Thompson, University of Dundee, United Kingdom

FR-P2b.36 **IMPROVING SINGLE PARTICLE LOCALIZATION WITH AN EMPIRICALLY CALIBRATED GAUSSIAN KERNEL**
Marcio de Moraes Marim, Bo Zhang, Jean-Christophe Olivo-Marin, Christophe Zimmer, Institut Pasteur, France

FR-P2b.37 **A MULTI-THREADED PROGRAM ARCHITECTURE FOR AN ANSYNCHRONOUS AND HIGHLY RESPONSIVE GUI FOR AUTOMATIC NEURONAL SURVIVAL QUANTIFICATION**
Fabrice de Chaumont, Nicolas Chenouard, Aurelie Mouret, Pierre Marie Lledo, Jean-Christophe Olivo-Marin, Institut Pasteur, France

FR-P2b.38 **CURVILINEAR MORPHO-HESSIAN FILTER**
Olena Tankyevych, Hugues Talbot, ESIEE, France; Petr Dokladal, CMM, France

FR-PM2-O1 **Parallel MRI** (Oral)
Time: Friday, May 16, 17:00 - 18:20
Place: La Seine A
Chair: Jeff Fessler

17:00 - 17:20
FR-PM2-O1.1 **DYNAMIC-PARALLEL MR IMAGE RECONSTRUCTION BASED ON ADAPTIVE COIL SENSITIVITY ESTIMATION**
Ke Liu, Jingxin Zhang, Monash University, Australia

17:20 - 17:40
FR-PM2-O1.2 **GENERALIZED RECONSTRUCTION BY INVERSION OF COUPLED SYSTEMS (GRICS) APPLIED TO PARALLEL MRI**
Freddy Odille, Pierre-André Vuissoz, Jacques Felblinger, Nancy University and INSERM ERI 13, France; David Atkinson, University College London, United Kingdom

17:40 - 18:00
FR-PM2-O1.3 **TIME-RESOLVED PARALLEL IMAGING WITH A REDUCED DYNAMIC FIELD OF VIEW**
Lei Hamilton, Georgia Institute of Technology, United States; Javier Acebron Fabregat, David Moratal, Universidad Politecnica de Valencia, Spain; Senthil Ramamurthy, Children's Healthcare of Atlanta, United States; Marijn Brummer, Emory University, School of Medicine, United States

18:00 - 18:20
FR-PM2-O1.4 **A VARIABLE PROJECTION APPROACH TO PARALLEL MAGNETIC RESONANCE IMAGING**
Jinhua Sheng, Leslie Ying, University of Wisconsin - Milwaukee, United States

FR-PM2-O2 **PET: reconstruction** (Oral)
Time: Friday, May 16, 17:00 - 18:20
Place: La Seine B
Chair: Françoise Peyrin

17:00 - 17:20
FR-PM2-O2.1 **ITERATIVE NONLINEAR LEAST SQUARES ALGORITHMS FOR DIRECT RECONSTRUCTION OF PARAMETRIC IMAGES FROM DYNAMIC PET**
Guobao Wang, Jinyi Qi, University of California, Davis, United States

17:20 - 17:40
FR-PM2-O2.2 **SIMULTANEOUS RECONSTRUCTION AND SEGMENTATION ALGORITHM FOR POSITRON EMISSION TOMOGRAPHY AND TRANSMISSION TOMOGRAPHY**
Dominique Van de Sompel, Michael Brady, Oxford University, United Kingdom

17:40 - 18:00
FR-PM2-O2.3 **MULTIPLICATIVE ITERATIVE ALGORITHMS FOR POSITIVE CONSTRAINED RECONSTRUCTIONS IN EMISSION AND TRANSMISSION TOMOGRAPHY**
Jun Ma, Macquarie University, Australia, Australia

18:00 - 18:20
FR-PM2-O2.4 **BAYESIAN PET IMAGE RECONSTRUCTION INCORPORATING ANATO-FUNCTIONAL JOINT ENTROPY**
Jing Tang, Benjamin M. W. Tsui, Arman Rahmim, The Johns Hopkins University, United States

FR-PM2-O3 **Vascular image processing** (Oral)
Time: Friday, May 16, 17:00 - 18:20
Place: La Seine C
Chair: Siddhartha Sikdar

17:00 - 17:20
FR-PM2-O3.1 **TEMPLATE-BASED MULTIPLE HYPOTHESES TRACKING OF SMALL VESSELS**
Ola Friman, Milo Hindennach, Heinz-Otto Peitgen, MeVis Research, Germany

17:20 - 17:40
FR-PM2-O3.2 **CAROTID PLAQUE TISSUE DIFFERENTIATION BASED ON RADIOFREQUENCY ECHOGRAPHIC SIGNAL LOCAL SPECTRAL CONTENT (RULES: RADIOFREQUENCY ULTRASONIC LOCAL ESTIMATORS)**
Leonardo Masotti, Elena Biagi, Simona Granchi, Alessandra Luddi, Luca Breschi, Rodolfo Facchini, Università degli Studi di Firenze, Italy

17:40 - 18:00
FR-PM2-O3.3 **A LEARNING BASED HIERARCHICAL MODEL FOR VESSEL SEGMENTATION**
Richard Socher, Adrian Barbu, Dorin Comaniciu, Siemens Corporate Research, United States

18:00 - 18:20
FR-PM2-O3.4 **FULLY AUTOMATIC 3D SEGMENTATION OF CORONARY ARTERIES BASED ON MATHEMATICAL MORPHOLOGY**
Bessem Bouraoui, C. Ronse, Image Sciences, Computer Sciences and Remote Sensing Laboratory, France; J. Baruthio, Nicolas Passat, LINC, UMR ULP-CNRS 7191, France; Ph. Germain, Service Radiologie, CHU Strasbourg, France

FR-PM2-O4 **EEG-MEG** (Oral)
Time: Friday, May 16, 17:00 - 18:20
Place: La Seine D
Chair: Dimitri Van De Ville

17:00 - 17:20

FR-PM2-O4.1 **NON-INVASIVE CLASSIFICATION OF CORTICAL ACTIVITIES FOR BRAIN COMPUTER INTERFACE: A VARIABLE SELECTION APPROACH**
Michel Besserve, Jacques Martinerie, Line Garnero, CNRS, France

17:20 - 17:40

FR-PM2-O4.2 **A TWO-STEP IMAGING PROCEDURE FOR MEG CHARACTERIZATION OF CORTICAL CURRENTS: LOCATION AND SPATIAL EXTENT.**
Sheraz Khan, Benoit Cottereau, Cognitive Neuroscience & Brain Imaging Laboratory, CNRS, France; Richard M. Leahy, University of Southern California, United States; John C. Mosher, Los Alamos National Laboratory, United States; Habib Ammari, Laboratoire Ondes et Acoustique, CNRS & ESPCI, France; Sylvain Baillet, Cognitive Neuroscience & Brain Imaging Laboratory, CNRS, France

17:40 - 18:00

FR-PM2-O4.3 **CORTICAL FLOW: INVESTIGATING THE SPATIOTEMPORAL DYNAMICS OF THE BRAIN**
Julien Lefèvre, Sylvain Baillet, Cognitive Neuroscience & Brain Imaging Laboratory, CNRS-LENA, UPMC Univ Paris 06, France

18:00 - 18:20

FR-PM2-O4.4 **EEG SOURCE LOCALIZATION BY MULTI-PLANAR ANALYTIC SENSING**
Djano Kandaswamy, Thierry Blu, EPFL, Switzerland; Laurent Spinelli, Christoph Michel, HUGE, Switzerland; Dimitri Van De Ville, EPFL, Switzerland

SA-P1a **Registration** (Poster)
Time: Saturday, May 17, 09:30 - 10:45
Place: Atrium Poster Area

SA-P1a.1 **ON THE REGISTRABILITY OF TWO CT VOLUMES**
Diego Fiorin, Marie-Pierre Jolly, Charles Florin, Siemens Corporate Research, United States

SA-P1a.2 **GAUSS-NEWTON OPTIMIZATION IN DIFFEOMORPHIC REGISTRATION**
Monica Hernandez, Salvador Olmos, University of Zaragoza, Spain

SA-P1a.3 **LOCAL SIMILARITY MEASURES FOR DEMONS-LIKE REGISTRATION ALGORITHMS**
Antonio Tristán-Vega, Gonzalo Vegas-Sánchez-Ferrero, Santiago Aja-Fernández, Laboratory of Image Processing, Spain

SA-P1a.4 **VALIDATING UNBIASED REGISTRATION ON LONGITUDINAL MRI SCANS FROM THE ALZHEIMER'S DISEASE NEUROIMAGING INITIATIVE (ADNI)**
Igor Yanovsky, University of California, Los Angeles, United States; Paul M. Thompson, UCLA School of Medicine, United States; Stanley Osher, University of California, Los Angeles, United States; Xue Hua, David Shattuck, Arthur W. Toga, Alex Leow, UCLA School of Medicine, United States

SA-P1a.5 **A NON-LINEAR REGISTRATION METHOD FOR DCE-MRI AND DCE-CT COMPARISON IN BLADDER TUMORS**
Katia Passera, Luca Mainardi, Politecnico di Milano, Italy; Deirdre Mcgrath, Josephine Naish, David L. Buckley, Susan Cheung, Yvon Watson, Angela Caunce, Giovanni Buonaccorsi, University of Manchester, United Kingdom; John P. Logue, Marcus B. Taylor, Christie Hospital, United Kingdom; Chris Taylor, University of Manchester, United Kingdom; John C Waterton, Helen Young, AstraZeneca, United Kingdom; Geoff J. M. Parker, University of Manchester, United Kingdom

SA-P1a.6 **REGULARIZED METHODS FOR TOPOLOGY-PRESERVING SMOOTH NONRIGID IMAGE REGISTRATION USING B-SPLINE BASIS**
Se Young Chun, Jeffrey Fessler, University of Michigan, United States

(Continued from previous page.)

SA-P1a.7 **COLORECTAL MRI IMAGE REGISTRATION USING PHASE MUTUAL INFORMATION FROM NON-PARAMETRIC PROBABILITY DENSITY FUNCTION ESTIMATOR**
Weiwei Zhang, Niranjan Joshi, Michael Brady, University of Oxford, United Kingdom

SA-P1a.8 **DEFORMATION BASED MORPHMETRY AND ATLAS BASED LABEL SEGMENTATION: APPLICATION TO SERIAL MOUSE BRAIN IMAGES**
Satheesh Maheswaran, Imperial College London, United Kingdom; Herve Barjart, Simon Bate, Neurology & Gastrointestinal Centre of Excellence for Drug Discovery, United Kingdom; Thomas Hartkens, Derek Hill, Ixico Ltd, United Kingdom; Lorna Tilling, Neil Upton, Michael F. James, Neurology & Gastrointestinal Centre of Excellence for Drug Discovery, United Kingdom; Jo Hajnal, Daniel Rueckert, Imperial College London, United Kingdom

SA-P1a.9 **ADAPTIVE NON-RIGID REGISTRATION OF 3D KNEE MRI IN DIFFERENT POSE SPACES**
Taehyun Rhee, University of Southern California, United States; J. P. Lewis, Weta Digital, New Zealand; Krishna Nayak, Ulrich Neumann, University of Southern California, United States

SA-P1a.10 **A NEW REGISTRATION METHOD BASED ON LOG-EUCLIDEAN TENSOR METRICS AND ITS APPLICATION TO GENETIC STUDIES**
Caroline Brun, Natasha Lepore, Laboratory of Neuro Imaging, United States; Xavier Pennec, INRIA Sophia Antipolis, France; Yi-Yu Chou, Agatha D. Lee, Laboratory of Neuro Imaging, United States; Greig deZubicaray, Center for Magnetic Resonance, Australia; Katie L. McMahon, Margaret J. Wright, University of Queensland, Australia; Marina Barysheva, Arthur W. Toga, Paul M. Thompson, Laboratory of Neuro Imaging, United States

SA-P1a.11 **REGISTRATION OF DYNAMIC RENAL MR IMAGES USING NEUROBIOLOGICAL MODEL OF SALIENCY**
Dwarikanath Mahapatra, Ying Sun, National University of Singapore, Singapore

SA-P1a.12 **ROBUST IMAGE REGISTRATION BASED ON A PARTITION OF UNITY FINITE ELEMENT METHOD**
Oudom Somphone, Sherif Makram-Ebeid, Medisys Research Lab, Philips Healthcare, France; Laurent Cohen, CEREMADE – Universite Paris IX Dauphine, France

(Continued from previous page.)

SA-P1a.13 **MULTI-SCALE DIFFEOMORPHIC CORTICAL REGISTRATION UNDER MANIFOLD SULCAL CONSTRAINTS**

Guillaume Auzias, Cognitive Neuroscience & Brain Imaging Laboratory, CNRS; UPMC Univ Paris 06; Hôpital de la Salpêtrière, France; Joan Alexis Glaunès, MAP5, Université Paris 5 - René Descartes, France; Arnaud Cachia, Research Unit of Neuroimaging & Psychiatry,Inserm-CEA, France; Pascal Cathier, NeuroSpin, CEA, France; Eric Bardinet, Olivier Colliot, Neuroscience & Brain Imaging Laboratory, CNRS; UPMC Univ Paris 06; Hôpital de la Salpêtrière, France; Jean-François Mangin, NeuroSpin, CEA, France; Alain Trouvé, CMLA, ENS de Cachan, France; Sylvain Baillet, Neuroscience & Brain Imaging Laboratory, CNRS; UPMC Univ Paris 06; Hôpital de la Salpêtrière, France

SA-P1a.14 **A METHOD FOR FRAME-BY-FRAME US TO CT REGISTRATION IN A JOINT CALIBRATION AND REGISTRATION FRAMEWORK**

Matthias Peterhans, Haydar Talib, MEM Research Center, Switzerland; Marius G. Linguraru, National Institute of Health, United States; Martin Styner, Departments of Computer Science and Psychiatry, United States; Miguel A. González Ballester, MEM Research Center, Switzerland

SA-P1a.15 **GEOMETRIC ALIGNMENT OF 2D GEL ELECTROPHORESIS IMAGES USING PHYSICS-BASED ELASTIC REGISTRATION**

Stefan Wörz, Marie-Luise Winz, Karl Rohr, University of Heidelberg, BIOQUANT, IPMB, and DKFZ Heidelberg, Germany

SA-P1a.16 **AN ALGORITHM TO MAP ASYMMETRIES OF BILATERAL OBJECTS IN POINT CLOUDS**

Benoit Combès, INRIA, France; Robin Hennessy, John Waddington, RCSI, Ireland; Neil Roberts, Mariarc, United Kingdom; Sylvain Prima, INRIA, France

SA-P1a.17 **COMPARISON OF THE DEFORMATIONS OF BRAIN TISSUES CAUSED BY TUMOR IN SEIZURE AND NON-SEIZURE PATIENTS**

Julien Dauguet, Brigham and Women's Hospital, United States; Simon K. Warfield, Children's Hospital, United States; Edward Bromfield, Alexandra Golby, Jong Woo Lee, Brigham and Women's Hospital, United States

(Continued from previous page.)

SA-P1a.18 **MUTUAL INFORMATION BASED NON-RIGID MOUSE REGISTRATION USING A SCALE-SPACE APPROACH**
Sangeetha Somayajula, Anand Joshi, Richard M. Leahy, University of Southern California, United States

SA-P1a.19 **PROMISING RESULTS FOR EARLY DIAGNOSIS OF LUNG CANCER**
Ayman El-Baz, University of Louisville, United States; Georgy Gimel'farb, University of Auckland, New Zealand; Robert. Falk, Jewish Hospital, United States; Mohamed Abou El-Ghar, Huda Refaie, University of Mansoura, Egypt

SA-P1a.20 **GENERATIVE ATLASES AND ATLAS SELECTION FOR C11-PIB PET-PET REGISTRATION OF ELDERLY, MILD COGNITIVE IMPAIRED AND ALZHEIMER DISEASE PATIENTS**
Jurgen Fripp, Pierrick Bourgeat, Oscar Acosta, The Australian e-Health Research Centre, Australia; Gareth Jones, Victor Villemagne, Austin Hospital, Australia; Sébastien Ourselin, University College London, United Kingdom; Chris Rowe, Austin Hospital, Australia; Olivier Salvado, The Australian e-Health Research Centre, Australia

SA-P1a.21 **TRACKING ORGAN OVERLAP FOR A CONSTRAINED NON-RIGID REGISTRATION ALGORITHM**
William Harvey Greene, Sudhakar Chelikani, Xenophon Papademetris, Lawrence Staib, Jonathan Knisely, James Duncan, Yale University, United States

SA-P1a.22 **DEFORMABLE REGISTRATION WITH SPATIALLY VARYING DEGREES OF FREEDOM CONSTRAINTS**
James Miller, Girish Gopalakrishnan, Manasi Datar, Paulo Mendonca, Rakesh Mullick, GE Global Research, United States

SA-P1a.23 **INTERSECTION BASED REGISTRATION OF SLICE STACKS TO FORM 3D IMAGES OF THE HUMAN FETAL BRAIN**
Kio Kim, Mads Hansen, Piotr Habas, University of California, San Francisco, United States; Francois Rousseau, Universite Louis Pasteur, France; Orit Glenn, A. James Barkovich, Colin Studholme, University of California, San Francisco, United States

(Continued from previous page.)

SA-P1a.24 **AUTOMATIC CO-REGISTRATION OF VOLUMETRIC IMAGES BASED ON IMPLANTED FIDUCIAL MARKERS**
Martin Koch, Jonathan Maltz, Siemens Medical Solutions (USA), Inc., United States; Serge Belongie, University of California, San Diego, United States; Bijumon Gangadharan, Supratik Bose, Himanshu Shukla, Ali Bani-Hashemi, Siemens Medical Solutions (USA), Inc., United States

SA-P1a.25 **APPLICATION AND VALIDATION OF REGISTRATION FRAMEWORK FOR REAL-TIME ATLAS GUIDED BIOPSY**
Ramkrishnan Narayanan, Eigen LLC, United States; Dinggang Shen, Christos Davatzikos, University of Pennsylvania, United States; David Crawford, Albaha Barqawi, Priya Werahera, University of Colorado, United States; Dinesh Kumar, Eigen LLC, United States; Jasjit Suri, Eigen, LLC, United States

SA-P1a.26 **GROUP-WISE MDL BASED REGISTRATION OF SMALL ANIMALS IN VIDEO SEQUENCES**
Yuan Han, Georg Langs, Nikos Paragios, Ecole Centrale de Paris, France

SA-P1a.27 **SPATIAL NORMALISATION OF THREE-DIMENSIONAL NEUROANATOMICAL MODELS USING SHAPE REGISTRATION, AVERAGING, AND WARPING**
Philippe Andrey, Emeric Maschino, Yves Maurin, INRA, France

SA-P1b **Computer aided detection and diagnosis** (Poster)
Time: Saturday, May 17, 09:30 - 10:45
Place: Atrium Poster Area

SA-P1b.28 **ULTRASOUND IMAGING-BASED PROCEDURE TO INTEGRATE THE DYNAMIC BEHAVIOR OF THE PELVIS IN TOTAL HIP ARTHROPLASTY PLANNING**
Guillaume Dardenne, Chafiaa Hamitouche, Eric Stindel, Christian Roux, LaTIM, France

SA-P1b.29 **APPLICATION OF LAWS' MASKS TO BONE TEXTURE ANALYSIS: AN INNOVATIVE IMAGE ANALYSIS TOOL IN OSTEOPOROSIS**
Mouna Rachidi, Christine Chappard, IINSERM Unit 658, France; Arnaud Marchadier, INSERM Unit 658, France; Clotilde Gadois, D3A® Medical Systems, France; Eric Lespessailles, CHR-Orleans, France; Claude-Laurent Benhamou, INSERM Unit 658, France

SA-P1b.30 **SUPPORT VECTOR MACHINE FOR DATA ON MANIFOLDS: AN APPLICATION TO IMAGE ANALYSIS**
Suman Sen, Mark Foskey, James Marron, Martin Styner, University of North Carolina, Chapel Hill, United States

SA-P1b.31 **3D MULTIFRACTAL ANALYSIS: APPLICATION FOR EPILEPSY DETECTION IN SPECT IMAGING**
Renaud Lopes, Nasr Makni, INSERM U703 and LAGIS CNRS UMR 8146, France; Romain Viard, INSERM U703, France; Marc Steinling, Nuclear Medicine Department, France; Salah Maouche, LAGIS CNRS UMR 8146, France; Nacim Betrouni, Inserm U703, France

SA-P1b.32 **ACOUSTICAL POWER COMPUTATION ACCELERATION TECHNIQUES FOR THE PLANNING OF ULTRASOUND THERAPY**
Jean-Louis Dillenseger, Carole Garnier, université de Rennes 1, France

SA-P1b.33 **A STOCHASTIC BONE REMODELING PROCESS**
Anne Ricordeau, Nedra Mellouli, PARIS 5 UNIVERSITY, France

(Continued from previous page.)

SA-P1b.34 **CLASSIFICATION OF LAYERED TISSUE PHANTOMS FOR DETECTION OF CHANGES IN EPITHELIAL TISSUE BELOW THE SURFACE USING A STOCHASTIC DECOMPOSITION MODEL FOR SCATTERED SIGNAL**
Fernand S. Cohen, Ezgi Taslidere, Sreekant Murthy, Drexel University, United States

SA-P1b.35 **LEARNING NON-HOMOGENOUS TEXTURES AND THE UNLEARNING PROBLEM WITH APPLICATION TO DRUSEN DETECTION IN RETINAL IMAGES**
Noah Lee, Andrew F. Laine, Theodore R. Smith, Columbia University, United States

SA-P1b.36 **IDENTIFICATION OF SKIN LESIONS FROM THE TRANSIENT THERMAL RESPONSE USING INFRARED IMAGING TECHNIQUE**
Muge Pirtini Cetingul, Cila Herman, Johns Hopkins University, United States

SA-P1b.37 **ON THE UNCERTAINTY IN SEQUENTIAL HYPOTHESIS TESTING**
Ricardo Santiago Mozos, Ramón Fernández Lorenzana, Universidad Carlos III de Madrid, Spain; Fernando Pérez Cruz, Princeton University, United States; Antonio Artés Rodríguez, Universidad Carlos III de Madrid, Spain

SA-P1b.38 **SIMULATION RESULTS OF A SMALL ANIMAL LIQUID XENON PET DETECTOR**
Yannick Grondin, INPG, France; Michel Desvignes, INPG-ENSERG, France; Laurent Desbat, UJF, France; Stéphane Mancini, INPG / LIS, France; Marie-Laure Gallin-Martel, Laurent Gallin-Martel, Olivier Rossetto, CNRS/INPG, France

SA-P1b.39 **THREE-DIMENSIONAL ULTRASOUND IMAGING OF REGENERATED SKIN WITH HIGH FREQUENCY ULTRASOUND**
Yoshifumi Saijo, Yoshihiro Hagiwara, Tohoku University, Japan; Kazuto Kobayashi, Nagaya Okada, Honda Electronics Co. Ltd., Japan; Akira Tanaka, Fukushima University, Japan; Naohiro Hozumi, Aichi Institute of Technology, Japan; Takahiro Iwamoto, Tohoku University, Japan

SA-P1b.40 **ESTIMATION OF CORTICAL MULTIVARIATE AUTOREGRESSIVE MODELS FOR EEG/MEG USING AN EXPECTATION-MAXIMIZATION ALGORITHM**
Bing Leung Patrick Cheung, Barry Van Veen, University of Wisconsin - Madison, United States

(Continued from previous page.)

SA-P1b.41 **POST-IMAGE ACQUISITION MITIGATION OF EXCITATION LIGHT LEAKAGE IN PATTERNED ILLUMINATION BASED NIR FLUORESCENCE TOMOGRAPHY**

Marc Bartels, Amit Joshi, John Rasmussen, Baylor College of Medicine, United States; Wolfgang Bangerth, Texas A&M University, United States; Eva Sevick, Baylor College of Medicine, United States

SA-P1b.42 **INVESTIGATION OF LABR3:CE AND LACL3:CE SCINTILLATORS FOR SPECT IMAGING**

Khalid Alzimami, Nicholas Spyrou, University of Surrey, United Kingdom; Salem Sassi, The Royal Marsden NHS Foundation Trust, United Kingdom

SA-AM-O1 **fMRI** (Oral)
Time: Saturday, May 17, 10:45 - 12:25
Place: La Seine A
Chair: Tulay Adali

10:45 - 11:05
SA-AM-O1.1 **NEDICA: DETECTION OF GROUP FUNCTIONAL NETWORKS IN FMRI USING SPATIAL INDEPENDENT COMPONENT ANALYSIS**
Vincent Perlbarg, Guillaume Marrelec, INSERM/UPMC, France; Julien Doyon, Université de Montréal, Canada; Mélanie Pélégrini-Issac, INSERM/UPMC, France; Stéphane Lehéricy, UPMC/CENIR, France; Habib Bénali, INSERM/UPMC, France

11:05 - 11:25
SA-AM-O1.2 **EXAMINING ASSOCIATIONS BETWEEN FMRI AND EEG DATA USING CANONICAL CORRELATION ANALYSIS**
Nicolle Correa, Yi-Ou Li, Tulay Adali, University of Maryland, Baltimore County, United States; Vince Calhoun, The Mind Institute and the University of New Mexico, United States

11:25 - 11:45
SA-AM-O1.3 **FMRI BRAIN ACTIVITY AND UNDERLYING HEMODYNAMICS ESTIMATION IN A NEW BAYESIAN FRAMEWORK**
David Afonso, João Sanches, Instituto de Sistemas e Robótica / Universidade Tecnica de Lisboa, Portugal; Martin Lauterbach, Faculdade de Medicina de Lisboa, Portugal

11:45 - 12:05
SA-AM-O1.4 **DEVELOPMENT OF FMRI TECHNIQUES FOR PLANNING IN FUNCTIONAL NEUROSURGERY FOR PARKINSON'S DISEASE**
M. Mallar Chakravarty, Pedro Rosa-Neto, Scott Broadbent, Alan C. Evans, D. Louis Collins, McConnell Brain Imaging Center, Canada

12:05 - 12:25
SA-AM-O1.5 **IMPROVED FMRI GROUP STUDIES BASED ON SPATIALLY VARYING NON-PARAMETRIC BOLD SIGNAL MODELING**
Philippe Ciuciu, Thomas Vincent, Anne-Laure Fouque, Alexis Roche, CEA, France

SA-AM-O2 **Organ modeling** (Oral)
Time: Saturday, May 17, 10:45 - 12:25
Place: La Seine B
Chair: Wiro Niessen

10:45 - 11:05
SA-AM-O2.1 **ORGAN APPROXIMATION IN μCT DATA WITH LOW SOFT TISSUE CONTRAST USING AN ARTICULATED WHOLE-BODY ATLAS**
Martin Baiker, Jouke Dijkstra, Ivo Que, Clemens Lowik, Johan Reiber, Boudewijn Lelieveldt, Leiden University Medical Center, Netherlands

11:05 - 11:25
SA-AM-O2.2 **LANDMARK SELECTION FOR SHAPE MODEL CONSTRUCTION VIA EQUALIZATION OF VARIANCE**
Sylvia Rueda, University of Nottingham, United Kingdom; Jayaram Udupa, University of Pennsylvania, United States; Li Bai, University of Nottingham, United Kingdom

11:25 - 11:45
SA-AM-O2.3 **THREE DIMENSIONAL MODELING OF THE LEFT VENTRICLE OF THE HEART USING SPHERICAL HARMONIC ANALYSIS**
Wafa Bel Hadj Khélifa, Asma Ben Abdallah, Faouzi Ghorbel, ENSI, Tunisia

11:45 - 12:05
SA-AM-O2.4 **AUTOMPR: AUTOMATIC DETECTION OF STANDARD PLANES IN 3D ECHOCARDIOGRAPHY**
Xiaoguang Lu, Bogdan Georgescu, Yefeng Zheng, Siemens Corporate Research, United States; Joanne Otsuki, Siemens Medical Solutions, United States; Dorin Comaniciu, Siemens Corporate Research, United States

12:05 - 12:25
SA-AM-O2.5 **MINIMUM DESCRIPTION LENGTH WITH LOCAL GEOMETRY**
Martin Styner, Ipek Oguz, UNC Chapel Hill, United States; Tobias Heimann, DKFZ, Germany; Guido Gerig, University of Utah, United States

SA-AM-O3 **Ultrasound imaging (statistical methods, filtering, segmentation)** (Oral)
Time: Saturday, May 17, 10:45 - 12:25
Place: La Seine C
Chair: Jan Kybic

10:45 - 11:05
SA-AM-O3.1 **USER PARAMETER FREE APPROACHES TO MULTISTATIC ADAPTIVE ULTRASOUND IMAGING**
Lin Du, Jian Li, University of Florida, United States; Petre Stoica, Uppsala University, Sweden

11:05 - 11:25
SA-AM-O3.2 **BAYESIAN NON LOCAL MEANS-BASED SPECKLE FILTERING**
Pierrick Coupé, University of Rennes I, France; Pierre Hellier, INRIA, France; Charles Kervrann, INRA, France; Christian Barillot, CNRS, France

11:25 - 11:45
SA-AM-O3.3 **LOCAL WALL MOTION CLASSIFICATION OF STRESS ECHOCARDIOGRAPHY USING A HIDDEN MARKOV MODEL APPROACH**
Sarina Mansor, J. Alison Noble, Institute of Biomedical Engineering, United Kingdom

11:45 - 12:05
SA-AM-O3.4 **OPTIMIZATION OF CONTRAST SENSITIVITY AND SPECIFICITY OF QUADRATIC ULTRASONIC IMAGING**
Mamoun Al-Mistarihi, Jordan University of Science and Technology, Jordan

12:05 - 12:25
SA-AM-O3.5 **NEURAL NETWORK ANALYSIS APPLIED TO TUMOR SEGMENTATION ON 3D BREAST ULTRASOUND IMAGES**
Sheng-Fang Huang, Yen-Ching Chen, Tzu Chi University, Taiwan; Woo Kyung Moon, Seoul Nation University Hospital, Republic of Korea

SA-AM-O4 **PET imaging** (Oral)
Time: Saturday, May 17, 10:45 - 12:25
Place: La Seine D
Chair: Johan Nuyts

10:45 - 11:05
SA-AM-O4.1 **ANALYTIC SYSTEM MATRIX RESOLUTION MODELING IN PET: AN APPLICATION TO RB-82 CARDIAC IMAGING**
Arman Rahmim, Martin Lodge, Jing Tang, Johns Hopkins University, United States; Sahel Lashkari, Mohammad Reza Ay, Medical Sciences University of Tehran, United States

11:05 - 11:25
SA-AM-O4.2 **A RESIDUAL CORRECTION METHOD FOR ITERATIVE RECONSTRUCTION WITH INACCURATE SYSTEM MODEL**
Lin Fu, Jinyi Qi, University of California, Davis, United States

11:25 - 11:45
SA-AM-O4.3 **APPLICATION OF A SPATIALLY VARIANT SYSTEM MODEL FOR 3-D WHOLE-BODY PET IMAGE RECONSTRUCTION**
Adam Alessio, Paul Kinahan, University of Washington, United States

11:45 - 12:05
SA-AM-O4.4 **CONDITIONAL PARTIAL VOLUME EFFECT CORRECTION FOR EMISSION TOMOGRAPHY: A WAVELET-BASED HIDDEN MARKOV MODEL AND MULTI-RESOLUTION APPROACH**
Adrien Le Pogam, INSERM U619, France; Mathieu Hatt, Nicolas Boussion, INSERM U650, France; Denis Guilloteau, Jean-Louis Baulieu, Caroline Prunier, INSERM U619, France; Frederico Turkheimer, Imperial College, Hammersmith Hospital, United Kingdom; Dimitris Visvikis, INSERM U650, France

12:05 - 12:25
SA-AM-O4.5 **AW-OSEM PARAMETER OPTIMIZATION FOR SELECTED EVENTS RELATED TO THE BREATH-HOLD CT POSITION IN RESPIRATORY-GATED PET ACQUISITIONS**
Joël Daouk, Loïc Fin, Pascal Bailly, Marc-Etienne Meyer, University Hospital of Amiens, France

SA-PM1-O1 **Microscopic Image Analysis** (Oral)
Time: Saturday, May 17, 14:00 - 16:00
Place: La Seine A
Chair: Jelena Kovacevic

14:00 - 14:20
SA-PM1-O1.1 **STATISTICAL COLOCALIZATION IN BIOLOGICAL IMAGING WITH FALSE DISCOVERY CONTROL**
Bo Zhang, Nicolas Chenouard, Jean-Christophe Olivo-Marin, Vannary Meas-Yedid, Institut Pasteur, France

14:20 - 14:40
SA-PM1-O1.2 **FAST NONLOCAL FILTERING APPLIED TO ELECTRON CRYOMICROSCOPY**
Jerome Darbon, University of California, Los Angeles, United States; Alexandre Cunha, California Institute of Technology, United States; Tony F. Chan, Stanley Osher, University of California, Los Angeles, United States; Grant J. Jensen, California Institute of Technology, United States

14:40 - 15:00
SA-PM1-O1.3 **TRACKING DISPLACEMENTS OF INTRACELLULAR ORGANELLES IN RESPONSE TO NANOMECHANICAL FORCES**
Yaron Silberberg, Andrew Pelling, The London Centre for Nanotechnology and Centre for NanoMedicine, United Kingdom; Gleb Yakubov, Unilever Corporate Research, United Kingdom; William Crum, David Hawkes, Centre for Medical Image Computing (CMIC), United Kingdom; Mike Horton, The London Centre for Nanotechnology and Centre for NanoMedicine, United Kingdom

15:00 - 15:20
SA-PM1-O1.4 **3D RESOLUTION MEASURE FOR MULTIFOCAL PLANE MICROSCOPY**
Jerry Chao, University of Texas at Dallas, United States; Sripad Ram, E. Sally Ward, University of Texas Southwestern Medical Center, United States; Raimund J. Ober, University of Texas at Dallas, United States

15:20 - 15:40
SA-PM1-O1.5 **INTEGRATED PROFILING OF CELL SURFACE PROTEIN AND NUCLEAR MARKER FOR DISCRIMINANT ANALYSIS**
Ju Han, Hang Chang, Kumari Andarawewa, Paul Yaswen, Mary Helen Barcellos-Hoff, Bahram Parvin, Lawrence Berkeley National Laboratory, United States

15:40 - 16:00
SA-PM1-O1.6 **FLEXIBLE SYNAPSE DETECTION IN FLUORESCENCE MICROGRAPHS BY MODELING HUMAN EXPERT GRADING**
Julia Herold, University of Bielefeld, Germany; Manuela Friedenberger, Marcus Bode, University of Magdeburg, Germany; Nasir Rajpoot, University of Warwick, United Kingdom; Walter Schubert, University of Magdeburg, Germany; Tim W. Nattkemper, University of Bielefeld, Germany

SA-PM1-O2 **Optical imaging** (Oral)
Time: Saturday, May 17, 14:00 - 16:00
Place: La Seine D
Chair: Michael Liebling

14:00 - 14:17
SA-PM1-O2.1 **A FAST THRESHOLDED LANDWEBER ALGORITHM FOR GENERAL WAVELET BASES: APPLICATION TO 3D DECONVOLUTION MICROSCOPY**
Cédric Vonesch, Michael Unser, EPFL, Switzerland

14:17 - 14:34
SA-PM1-O2.2 **FULL RANGE SWEPT-SOURCE OPTICAL COHERENCE TOMOGRAPHY USING 3X3 MACH-ZEHNDER INTERFEROMETER WITH UNBALANCED DIFFERENTIAL DETECTION**
Youxin Mao, Costel Flueraru, Sherif Sherif, Shoude Chang, National Research Council Canada, Canada

14:34 - 14:51
SA-PM1-O2.3 **EFFECT OF DEPTH OF CORRELATION ON CROSS-CORRELATION BLOOD FLOW MEASUREMENTS IN GLASS MICROCHANNELS**
Boris Chayer, Jacques A. de Guise, Guy Cloutier, University of Montreal Hospital Research Center, Canada

14:51 - 15:08
SA-PM1-O2.4 **NON-UNIFORM 3D DISTANCE TRANSFORM FOR ANISOTROPIC SIGNAL CORRECTION IN CONFOCAL IMAGE VOLUMES OF SKELETAL MUSCLE CELL NUCLEI**
Patrick Karlsson Edlund, Uppsala University, Sweden; Joakim Lindblad, Swedish University of Agricultural Sciences, Sweden

15:08 - 15:25
SA-PM1-O2.5 **MICRO-ROTATION IMAGING DECONVOLUTION**
Bertrand LeSaux, Bernard Chalmond, Yong Yu, Alain Trouvé, ENS Cachan, France; Olivier Renaud, Spencer Shorte, Institut Pasteur, France

15:25 - 15:42
SA-PM1-O2.6 **AUTOMATED LATERAL SECTIONING FOR KNIFE-EDGE SCANNING MICROSCOPY**
Jaerock Kwon, David Mayerich, Yoonsuck Choe, Bruce McCormick, Texas A&M University, United States

15:42 - 15:59
SA-PM1-O2.7 **SPARSITY REPRESENTATION FOR LIMITED DATA TOMOGRAPHY**
Hstau Liao, Wadsworth Center, United States; Guillermo Sapiro, University of Minnesota, United States

SA-PM-SFS1 **Computer-assisted Interventions** (Special Session)
Time: Saturday, May 17, 14:00 - 16:00
Place: La Seine B
Organizers and Chairs: Nassir Navab and Kevin Cleary

14:00 - 14:20
SA-PM-SFS1.1 COMPUTER-ASSISTED AND IMAGE-GUIDED ABDOMINAL INTERVENTIONS
Kevin Cleary, Jill Bruno, Jason Wright, Filip Banovac, Georgetown University Hospital, United States

14:20 - 14:40
SA-PM-SFS1.2 HYBRID SURGERY – THE WAY TOWARDS NOTES THE CHALLENGE FOR COMPUTER SCIENCE
H. Feussner, S. Can, A. Fiolka, A. Schneider, Klinikum rechts der Isar der TU München, Germany

14:40 - 15:00
SA-PM-SFS1.3 REAL-TIME INTRA-OPERATIVE 3D TISSUE DEFORMATION RECOVERY
Benny Lo, Adrian J. Chung, Danail Stoyanov, George Mylonas, Guang-Zhong Yang, Imperial College London, United Kingdom

15:00 - 15:20
SA-PM-SFS1.4 COMPUTER-ASSISTED SOFT TISSUE INTERVENTIONS
Hans-Peter Meinzer, Lena Maier-Hein, Ingmar Wegner, Matthias Baumhauer, Ivo Wolf, German Cancer Research Center, Germany

15:20 - 15:40
SA-PM-SFS1.5 NAVIGATED NUCLEAR PROBES FOR INTRA-OPERATIVE FUNCTIONAL IMAGING
Nassir Navab, Joerg Traub, Computer Aided Medical Procedures (CAMP), TUM, Germany; Thomas Wendler, Computer Aided Medical Procedures (CAMP) and Department of Nuclear Medicine, Klinikum rechts der Isar, TUM, Germany; Andreas Buck, Sibylle Ilse Ziegler, Department of Nuclear Medicine, Klinikum rechts der Isar, TUM, Germany

15:40 - 16:00
SA-PM-SFS1.6 VIRTUAL REALITY AND AUGMENTED REALITY APPLIED TO LAPAROSCOPIC AND NOTES PROCEDURES
Luc Soler, Stéphane Nicolau, Jean-Baptiste Fasquel, Vincent Agnus, Arnaud Charnoz, Alexandre Hostettler, Johan Moreau, IRCAD, France; Clément Forest, DIgital Trainers, France; Didier Mutter, Jacques Marescaux, IRCAD, France

SA-PM-SFS2 Animal PET and SPECT (Special Session)
Time: Saturday, May 17, 14:00 - 16:00
Place: La Seine C
Organizers and Chairs: Freek Beekman and Arion Chatziioannou

14:00 - 14:20
SA-PM-SFS2.1 GEOMETRICAL CALIBRATION AND APERTURE CONFIGURATION DESIGN IN MULTI-PINHOLE SPECT
Kathleen Vunckx, K.U.Leuven, Belgium; Michel Defrise, Vrije Universiteit Brussel, Belgium; Dirk Bequé, GE Global Research, Germany; Christian Vanhove, Andriy Andreyev, Vrije Universiteit Brussel, Belgium; Johan Nuyts, K.U.Leuven, Belgium

14:20 - 14:40
SA-PM-SFS2.2 ADAPTIVE SMALL-ANIMAL SPECT/CT
L. R. Furenlid, J. W. Moore, M. Freed, M. A. Kupinski, E. Clarkson, Z. Liu, D. W. Wilson, J. M. Woolfenden, H. H. Barrett, University of Arizona, United States

14:40 - 15:00
SA-PM-SFS2.3 IMAGING DYNAMICS OF ORGANS AND DRUGS AT SUB-HALF-MM AND SUB-MINUTE RESOLUTION USING FOCUSING PINHOLE SPECT
Freek Beekman, TU-Delft, UMC Utrecht, MILabs, Netherlands; Frans van der Have, UMC Utrecht, MILabs, Netherlands; Brendan Vastenhouw, Woutjan Branderhorst, Annemarie can der Linden, Marten Smidt, UMC Utrecht, Netherlands

15:00 - 15:20
SA-PM-SFS2.4 EXTENDING THE IMAGE RESOLUTION OF SMALL ANIMAL PET VIA ACCESSORY INSERT DEVICES
Yuan-Chuan Tai, Heyu Wu, Debashish Pal, Joseph O'Sullivan, Washington University, St Louis, United States

15:20 - 15:40
SA-PM-SFS2.5 SYSTEM SENSITIVITY IN PRECLINICAL SMALL ANIMAL IMAGING
Arion-Xenofon Chatziioannou, Qinan Bao, David Geffen School of Medicine at UCLA, United States; Nicolas Karakatsanis, Natinal Technical University of Athens, Greece

15:40 - 16:00
SA-PM-SFS2.6 BEYOND CLEARPET: NEXT AIMS
Karl Ziemons, Forschungszentrum Jülich GmbH, Germany; Peter Bruyndonckx, Vrije Universiteit Brussel, Belgium; Jorge Perez, Centro de Investigaciones Energéticas Medioambientales y Tecnolóigicas, Spain; Uwe Pietrzyk, Forschungszentrum Jülich GmbH, Germany; P. Rato, Centro de Investigaciones Energéticas, Medioambientales y Tecnolóigicas, Spain; Stefaan Tavernier, Vrije Universiteit Brussel, Belgium

SA-P2a **Cardiac and vascular imaging** (Poster)
Time: Saturday, May 17, 16:00 - 17:00
Place: Atrium Poster Area

SA-P2a.1 **CORRECTING SURFACE COIL INTENSITY INHOMOGENEITY IMPROVES QUANTITATIVE ANALYSIS OF CARDIAC MAGNETIC RESONANCE IMAGES**
Li-Yueh Hsu, Anthony Aletras, Andrew Arai, National Institutes of Health, United States

SA-P2a.2 **AUTOMATIC FILTER DESIGN IN HARP ANALYSIS OF TAGGED MAGNETIC RESONANCE IMAGES**
Martina Marinelli, Scuola Superiore Sant'Anna, Italy; Vincenzo Positano, MRI Lab, CNR Institute of Clinical Physiology, Italy; Nael F. Osman, Johns Hopkins University, United States; Fabio A. Recchia, Scuola Superiore Sant'Anna, Italy; Massimo Lombardi, MRI Lab, CNR Institute of Clinical Physiology, Italy; Luigi Landini, Dep. of Information Engineering, University of Pisa, Italy

SA-P2a.3 **MEASURING 3D LEFT VENTRICULAR STRAIN FROM UNWRAPPED HARMONIC PHASE**
Bharath Ambale, Thomas S. Denney Jr., Auburn University, United States; Himanshu Gupta, Steven Lloyd, Louis Dell'Italia, University of Alabama at Birmingham, United States

SA-P2a.4 **INTEGRATED SEGMENTATION AND DEFORMATION ANALYSIS OF 4-D CARDIAC MR IMAGES**
Yun Zhu, Ping Yan, Xenophon Papademetris, Albert Sinusas, James Duncan, Yale University, United States

SA-P2a.5 **UNBIASED MULTIPLE-SUBJECT ALIGNMENT OF LEFT VENTRICLES**
K. S. Shriram, Srikanth Suryanarayanan, Vivek Vaidya, Srinivasan Rajagopalan, GE Global Research, India

SA-P2a.6 **A NEW SINGULAR PERTURBATION APPROACH FOR IMAGE SEGMENTATION TRACKING**
Joël Schaerer, Jérôme Pousin, Patrick Clarysse, Insa de Lyon, France

(Continued from previous page.)

SA-P2a.7 **MESHFREE FRAMEWORK FOR IMAGE-DERIVED MODELLING**
Heye Zhang, Bioengineering Institute, University of Auckland, New Zealand; Linwei Wang, College of computer and information Sciences, Rochester Institute of Technology, United States; Peter Hunter, Bioengineering Institute, University of Auckland, New Zealand; Pengcheng Shi, College of Computer and Information Sciences, Rochester Institute of Technology, United States

SA-P2a.8 **ITERATIVE CT RECONSTRUCTION OF REAL DATA WITH METAL ARTIFACT REDUCTION**
Benoit Hamelin, Yves Goussard, David Gendron, École Polytechnique de Montréal, Canada; Jean-Pierre Dussault, Université de Sherbrooke, Canada; Guy Cloutier, Gilles Beaudoin, Gilles Soulez, Centre de Recherche, Centre Hospitalier de l'Université de Montréal, Canada

SA-P2a.9 **A QUANTIFICATION FRAMEWORK FOR POST-LESION NEO-VASCULARIZATION IN RETINAL ANGIOGRAPHY**
Sylvain Takerkart, Romain Fenouil, CNRS - UMR 6193, France; Jérome Piovano, INRIA, France; Alexandre Reynaud, CNRS - UMR 6193, France; Louis Hoffart, Hopital de la Timone, France; Frédéric Chavane, CNRS - UMR 6193, France; Théodore Papadopoulo, INRIA, France; John Conrath, Hopital de la Timone, France; Guillaume S. Masson, CNRS - UMR 6193, France

SA-P2a.10 **CONJOINT USE OF CODED-APERTURE COLLIMATORS AND MLEM ALGORITHM: TOWARDS LARGE BLOOD VESSELS RECONSTRUCTION AT 511 KEV**
Xavier Hubert, Dominique Chambellan, Samuel Legoupil, Jean-Robert Deverre, CEA, France; Nikos Paragios, ECP, France

SA-P2a.11 **MODEL-BASED RESPIRATORY MOTION CORRECTION USING 3-D ECHOCARDIOGRAPHY**
Andrew King, Christian Jansen, Redha Boubertakh, Kawal Rhode, Reza Razavi, Graeme Penney, King's College London, United Kingdom

SA-P2a.12 **MOTION DECORRELATION IN ECHOCARDIOGRAPHY: ANALYSIS FROM A REALISTIC SIMULATION**
Basma Touil, Olivier Bernard, Denis Friboulet, CREATIS, France

SA-P2a.13 **4D RECONSTRUCTION FOR GATED CARDIAC SPECT USING FOURIER BASIS FUNCTIONS**
Xiaofeng Niu, Yongyi Yang, Illinois Institute of Technology, United States

(Continued from previous page.)

SA-P2a.14 **ANALYSIS AND MITIGATION OF CALCIUM ARTIFACTS IN CARDIAC MULTIDETECTOR CT**
Zhuangli Liang, Boston University, United States; Synho Do, Massachusetts General Hospital, United States; William Karl, Boston University, United States; Thomas Brady, Homer Pien, Massachusetts General Hospital, United States

SA-P2a.15 **CONSTRUCTION OF ENDOCARDIAL AND EPICARDIAL SURFACE MODELS FROM SEGMENTED MRI**
Arnaud Bistoquet, Oskar Skrinjar, Georgia Institute of Technology, United States

SA-P2a.16 **BRANCHING MEDIAL MODELS FOR CARDIAC SHAPE REPRESENTATION**
Hui Sun, Brian Avants, University of Pennsylvania, United States; Alejandro Frangi, Sebastian Ordas, University Pompeu Fabra, Spain; James Gee, Paul Yushkevich, University of Pennsylvania, United States

SA-P2a.17 **TIME-RESOLVED CARDIAC CT RECONSTRUCTION USING THE ENSEMBLE KALMAN FILTER**
Ashvin George, National Institutes of Health, United States; Mark Butala, University of Illinois, United States; Richard Frazin, University of Michigan, United States; Farzad Kamalabadi, Yoram Bresler, University of Illinois, United States

SA-P2b **Magnetic Resonance Imaging and Spectroscopy** (Poster)
Time: Saturday, May 17, 16:00 - 17:00
Place: Atrium Poster Area

SA-P2b.18 **ESTIMATION OF THE RESPIRATORY WAVEFORM FROM AN ACCELEROMETER**
Phan Duy Hung, CEA-GRENOBLE/DRT/LETI/DTBS/LE2S, France and MICA, HUT-CNRS/UMI-2954-Grenoble INP, Viet Nam; Stephane Bonnet, Guillemaud Regis, CEA-GRENOBLE/DRT/LETI/DTBS/LE2S, France; Eric Castelli, Pham Thi Ngoc Yen, MICA, HUT-CNRS/UMI-2954-Grenoble INP, 1 Dai Co Viet, Hanoi, Vietnam, Viet Nam

SA-P2b.19 **AUTOMATIC ASSESSMENT OF MYOCARDIAL FIBROSIS BY DELAYED ENHANCED MAGNETIC RESONANCE IMAGING**
Vincenzo Positano, Institute of Clinical Physiology, Italy; Laura Brotini, University of Pisa, Italy; Giovanni Aquaro, Alessandro Pingitore, Massimo Lombardi, Institute of Clinical Physiology, Italy; Luigi Landini, University of Pisa, Italy; Maria Filomena Santarelli, Institute of Clinical Physiology, Italy

SA-P2b.20 **INNOVATION MODELLING AND WAVELET ANALYSIS OF FRACTAL PROCESSES IN BIO-IMAGING**
Pouya Tafti, Dimitri Van De Ville, Michael Unser, EPFL, Switzerland

SA-P2b.21 **IMPROVED SPIRAL SENSE RECONSTRUCTION USING A MULTISCALE WAVELET MODEL**
Bo Liu, University of Wisconsin - Milwaukee, United States; Emad Abdelsalam, GE Healthcare, United States; Jinhua Sheng, Leslie Ying, University of Wisconsin - Milwaukee, United States

SA-P2b.22 **QUANTIFIED BRAIN ASYMMETRY FOR AGE ESTIMATION OF NORMAL AND AD/MCI SUBJECTS**
Leonid Teverovskiy, Carnegie Mellon University, United States; James Becker, Oscar Lopez, University of Pittsburgh Medical Center, United States; Yanxi Liu, Penn State University, Carnegie Mellon University, Uinversity of Pittsburgh Medical Center, United States

SA-P2b.23 **AN OPTIMISED MULTI-BASELINE APPROACH FOR ON-LINE MR-TEMPERATURE MONITORING ON COMMODITY GRAPHICS HARDWARE**
Baudouin Denis de Senneville, Laboratory for Molecular and Functional Imaging: From Physiology to Therapy, France; Karsten Noe, Department of Computer Science, University of Aarhus, Denmark; Mario Ries, Laboratory for Molecular and Functional Imaging: From Physiology to Therapy, France; Michael Pedersen, MR Research Centre Institute of Clinical Medicine, Denmark; Chrit Moonen, Laboratory for Molecular and Functional Imaging: From Physiology to Therapy, France; Thomas Sorensen, Department of Medical Physics and Bioengineering, United Kingdom

(Continued from previous page.)

SA-P2b.24 **FILTERING, SEGMENTATION AND REGION CLASSIFICATION BY HYPERSPECTRAL MATHEMATICAL MORPHOLOGY OF DCE-MRI SERIES FOR ANGIOGENESIS IMAGING**
Guillaume Noyel, Jesus Angulo, Dominique Jeulin, Ecole des Mines de Paris, France; Daniel Balvay, Charles-André Cuenod, LRI-EA4062 Paris V Descartes, APHP - HEGP, France

SA-P2b.25 **REPRESENTATION OF TIME-VARYING SHAPES IN THE LARGE DEFORMATION DIFFEOMORPHIC FRAMEWORK**
Ali Khan, Mirza Faisal Beg, Simon Fraser University, Canada

SA-P2b.26 **A FAST METHOD FOR COMPUTING AND CORRECTING INTENSITY INHOMOGENEITIES IN MRI**
Olivier Noterdaeme, Michael Brady, Wolfson Medical Vision Laboratory, United Kingdom

SA-P2b.27 **EFFECTIVE VOIGT MODEL ESTIMATION USING MULTIPLE RANDOM STARTING VALUES AND PARAMETER BOUNDS SETTINGS FOR IN VIVO HEPATIC 1H MAGNETIC RESONANCE SPECTROSCOPIC DATA**
Hélène Ratiney, Adriana Bucur, Michaël Sdika, Olivier Beuf, Franck Pilleul, Sophie Cavassila, CNRS, France

SA-P2b.28 **HIGH SPEED MULTIPLE ECHO ACQUISITION (HISTO): A RAPID AND SIMULTANEOUS ASSESSMENT OF FAT AND IRON CONTENT IN LIVER BY 1HMRS, VALIDATION ON PHANTOMS AND PATIENTS**
Nashiely Pineda-Alonso, Diego Martin, Qin Xu, Puneet Sharma, Miriam Vos, Xiaoping Hu, Emory University, United States

SA-P2b.29 **RLS-GRAPPA: RECONSTRUCTING PARALLEL MRI DATA WITH ADAPTIVE FILTERS**
W. Scott Hoge, Brigham and Women's Hospital and Harvard Medical School, United States; Fernando Gallego, Universitat Politecnica de Catalunya, Spain; Zhikui Xiao, Tsinghua University, China; Dana H. Brooks, Northeastern University, United States

SA-P2b.30 **HIGH DIMENSIONAL STATISTICAL SHAPE MODEL FOR MEDICAL IMAGE ANALYSIS**
Heng Huang, Fillia Makedon, University of Texas at Arlington, United States; Roderick McColl, University of Texas Southwestern Medical Center, United States

SA-P2b.31 **TEXTURE ANALYSIS OF LESION PERFUSION VOLUMES IN DYNAMIC CONTRAST-ENHANCED BREAST MRI**
Sang Ho Lee, Jong Hyo Kim, Jeong Seon Park, Jung Min Chang, Sang Joon Park, Yun Sub Jung, Seoul National University College of Medicine, Republic of Korea; Sungho Tak, Korea Advanced Institute of Science and Technology (KAIST), Republic of Korea; Woo Kyung Moon, Seoul National University College of Medicine, Republic of Korea

SA-P2c **Shape and motion analysis** (Poster)
Time: Saturday, May 17, 16:00 - 17:00
Place: Atrium Poster Area

SA-P2c.32 **QUANTIFYING BLOOD FLOW DIVISION AT BIFURCATIONS FROM ROTATIONAL ANGIOGRAPHY**
Irina Waechter, University College London, United Kingdom; Joerg Bredno, Philips Research Europe, Germany; Roel Hermans, Philips Medical Systems, Netherlands; Dean Barratt, University College London, United Kingdom; Juergen Weese, Philips Research Europe, Germany; David Hawkes, University College London, United Kingdom

SA-P2c.33 **MOTION CORRECTION FOR AUGMENTED FLUOROSCOPY – APPLICATION TO LIVER EMBOLIZATION**
James Ross, Navneeth Subramanian, GE, United States; Stephen Solomon, Memorial Sloan Kettering Cancer Center, United States

SA-P2c.34 **CONVEX ANALYSIS AND SEPARATION OF COMPOSITE SIGNALS IN DCE-MRI**
Li Chen, Dept of Electrical and Computer Eng, Virginia Polytechnic Institute and State University, United States; Tsung-Han Chan, Institute Communications Eng and Dept of Electrical Eng, National Tsing Hua University, Taiwan; Peter Choyke, Molecular Imaging Program, National Cancer Institute, United States; Chong-Yung Chi, Institute Communications Eng and Dept of Electrical Eng, National Tsing Hua University, Taiwan; Ge Wang, Yue Wang, Dept of Electrical and Computer Eng, Virginia Polytechnic Institute and State University, United States

SA-P2c.35 **FAST 3D MESH GENERATION OF FEMUR BASED ON PLANAR PARAMETERIZATION AND MORPHING**
Najah Hraiech, ANSYS France / Universite Rennes 1, France; Fulvia Taddei, Laboratorio di Tecnologia Medica, Istituti Ortopedici Rizzoli, Italy; Emmanuel Malvesin, Michel Rochette, ANSYS France, France; Marco Viceconti, Laboratorio di Tecnologia Medica, Istituti Ortopedici Rizzoli, Italy

SA-P2c.36 **A THINNING ALGORITHM FOR EQUINE TENDON STRUCTURE IDENTIFICATION FROM 2D ULTRASOUND IMAGES**
Ali Meghoufel, École de Technologie Supérieure, Canada; Guy Cloutier, Montrear University, Canada; Nathalie Crevier-Denoix, Ecole Nationale Vétérinaire d'Alfort, France; Jacques A. De Guise, École te Technologie Supérieure, Canada

SA-P2c.37 **ACOUSTIC SHADOWS DETECTION, APPLICATION TO ACCURATE RECONSTRUCTION OF 3D INTRAOPERATIVE ULTRASOUND**
Pierre Hellier, Pierrick Coupe, Pierre Meyer, Xavier Morandi, INRIA, France; Louis Collins, McGill University, France

(Continued from previous page.)

SA-P2c.38 **ANISOTROPY FACTOR ESTIMATION FROM BACKSCATTERED Q ELEMENTS OF STOKES VECTORS**
Julie Falconet, Raphaël Sablong, Emmanuel Perrin, Université Claude Bernard Lyon 1, France; Hervé Saint-Jalmes, Université Rennes 1, France

SA-P2c.39 **AUTOMATED LOCALISATION OF RETINAL OPTIC DISK USING HOUGH TRANSFORM**
Sribalamurugan Sekhar, Waleed Al-Nuaimy, Asoke Nandi, University of Liverpool, United Kingdom

SA-P2c.40 **SUPERVISED SHAPE ANALYSIS FOR RISK ASSESSMENT IN OSTEOPOROSIS**
Marleen de Bruijne, University of Copenhagen, Denmark; Paola Pettersen, Center for Clinical and Basic Research, Denmark

SA-P2c.41 **EFFECT OF THE BLOOD FUNCTION ERROR ON THE ESTIMATED KINETIC PARAMETERS WITH DYNAMIC PET**
Yafang Cheng, Imam Samil Yetik, Illinois Institute of Technology, United States

SA-PM2-O1 **Small animal imaging** (Oral)
Time: Saturday, May 17, 17:00 - 18:20
Place: La Seine D
Chair: Amit Joshi

17:00 - 17:20
SA-PM2-O1.1 **FDG IMAGING OF 1MM TUMOR WITH AN ULTRA HIGH RESOLUTION ANIMAL PET**
Keizo Ishii, Yoshihito Funaki, Youhei Kikuch, Hiromichi Yamazaki, Shigeo Matsuyama, Atsuki Terakawa, Mitsuhiro Fujiwara, Ren Iwata, Tetsuya Kodama, Yukiko Watanabe, Tohoku University, Japan; Naoto Tanizaki, Daizo Amano, Takashi Yamaguchi, Sumitomo Heavy Industries Ltd., Japan

17:20 - 17:40
SA-PM2-O1.2 **FLUORESCENCE DIFFUSE OPTICAL TOMOGRAPHIC SYSTEM FOR ARBITRARY SHAPED SMALL ANIMALS**
Anne Koenig, Lionel Hervé, Jérôme Boutet, Michel Berger, Jean-Marc Dinten, Anabela Da Silva, Philippe Peltié, Philippe Rizo, LETI-CEA MINATEC, France

17:40 - 18:00
SA-PM2-O1.3 **NEW TECHNIQUES FOR DATA FUSION IN MULTIMODAL FMT-CT IMAGING**
Damon Hyde, Northeastern University, United States; Eric Miller, Tufts University, United States; Dana H. Brooks, Northeastern University, United States; Vasilis Ntziachristos, Technical University of Munich and Helmholtz Center Munich, United States

18:00 - 18:20
SA-PM2-O1.4 **MULTI-MODALITY CT-PET-NIR FLUORESCENCE TOMOGRAPHY**
Amit Joshi, John Rasmussen, Sunkuk Kwon, Baylor College of Medicine, United States; Todd Wareing, John McGhee, Transpire Inc., United States; Eva Sevick, Baylor College of Medicine, United States

SA-PM2-O2 **Non-optical micro-imaging** (Oral)
Time: Saturday, May 17, 17:00 - 18:20
Place: La Seine A
Chair: Gabriel Corkidi

17:00 - 17:20
SA-PM2-O2.1 **MODELING OF FORCE-VOLUME IMAGES IN ATOMIC FORCE MICROSCOPY**
Charles Soussen, David Brie, Centre de Recherche en Automatique de Nancy, France; Fabien Gaboriaud, Laboratoire de Chimie Physique et Microbiologie pour l'Environnement, France; Cyril Kessler, Centre de Recherche en Automatique de Nancy, France

17:20 - 17:40
SA-PM2-O2.2 **AN OPTIMAL-PATH APPROACH FOR NEURAL CIRCUIT RECONSTRUCTION**
Elizabeth Jurrus, Ross Whitaker, Bryan Jones, Robert Marc, Tolga Tasdizen, University of Utah, United States

SA-PM2-O3 **Compressive Sensing and Sparsity** (Oral)
Time: Saturday, May 17, 17:00 - 18:20
Place: La Seine B
Chair: Jing Tang

17:00 - 17:20
SA-PM2-O3.1 **DYNAMIC MRI WITH COMPRESSED SENSING IMAGING USING TEMPORAL CORRELATIONS**
Jim Ji, Tao Long, Texas A&M University, United States

17:20 - 17:40
SA-PM2-O3.2 **HIGH RESOLUTION DYNAMIC MRI USING MOTION ESTIMATED AND COMPENSATED COMPRESSED SENSING**
Hong Jung, Jong Chul Ye, Korea Advanced Institute of Science and Technology (KAIST), Republic of Korea

17:40 - 18:00
SA-PM2-O3.3 **EXACT RECONSTRUCTION FORMULA FOR DIFFUSE OPTICAL TOMOGRAPHY USING SIMULTANEOUS SPARSE REPRESENTATION**
Jong Chul Ye, Su Yeon Lee, Korea Advanced Institute of Science and Technology (KAIST), Republic of Korea; Yoram Bresler, Univ. of Illinois at Urbana-Champaign, United States

SA-PM2-O4 **Cortex** (Oral)
Time: Saturday, May 17, 17:00 - 18:20
Place: La Seine C
Chair: Olivier Colliot

17:00 - 17:20
SA-PM2-O4.1 **SEGMENTATION-FREE MEASUREMENT OF CORTICAL THICKNESS FROM MRI**
Iman Aganj, Guillermo Sapiro, University of Minnesota, United States; Neelroop Parikshak, Sarah K. Madsen, Paul M. Thompson, University of California, Los Angeles, United States

17:20 - 17:40
SA-PM2-O4.2 **DEFINING CORTICAL SULCUS PATTERNS USING PARTIAL CLUSTERING BASED ON BOOTSTRAP AND BAGGING**
Zhong Yi Sun, Denis Rivière, Edouard Duchesnay, Bertrand Thirion, Fabrice Poupon, Jean-François Mangin, Neurospin, France

17:40 - 18:00
SA-PM2-O4.3 **AUTOMATIC DETECTION OF SUBTLE FOCAL CORTICAL DYSPLASIA USING SURFACE-BASED FEATURES ON MRI**
Pierre Besson, Neuroimaging of Epilepsy Laboratory, Montreal Neurological Institute, Canada; Olivier Colliot, Cognitive Neuroscience and Brain Imaging Laboratory, CNRS UPR 640-LENA, Université Pierre et Marie Curie - Paris 6, France; Alan C. Evans, McConnell Brain Imaging Center, Canada; Andrea Bernasconi, Neuroimaging of Epilepsy Laboratory, Montreal Neurological Institute, Canada

18:00 - 18:20
SA-PM2-O4.4 **CORTICAL CORRESPONDENCE USING ENTROPY-BASED PARTICLE SYSTEMS AND LOCAL FEATURES**
Ipek Oguz, UNC Chapel Hill, United States; Joshua Cates, P. Thomas Fletcher, Ross Whitaker, University of Utah, United States; Derek Cool, Robarts Research Institute, Canada; Stephen Aylward, Kitware Inc., United States; Martin Styner, UNC Chapel Hill, United States

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